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## How Interactions with Staff Relate to Students' Early-Career Success at Small Residential Colleges

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**HOW INTERACTIONS WITH STAFF RELATE TO STUDENTS' EARLY-CAREER  
SUCCESS AT SMALL RESIDENTIAL COLLEGES**

by

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## **ABSTRACT**

### **HOW INTERACTIONS WITH STAFF RELATE TO STUDENTS' EARLY-CAREER SUCCESS AT SMALL RESIDENTIAL COLLEGES**

Donna L. Fenton  
Old Dominion University, 2021  
Director: Dr. Philip A. Reed

College completion in the United States is a complex and incessant problem resistant to change despite decades of effort. To address a precursor to completion, this quantitative study focused on early-career success within college. The problem of this study was to examine settings beyond large research universities and explore how interactions with professional staff affect student success.

Non-experimental research was conducted in Fall 2020, the first full semester of in-person education during the COVID-19 pandemic. Students were recruited from first-year seminars (FYS) and follow-up seminars (FUS) at a small residential college in the Midwest region of the United States. Of students recruited, freshmen (93%) and sophomores (100%) participated for an overall response rate of 95% ( $n = 362$ ).

Participants reported their willingness to communicate and perceptions of staff non-verbal immediacy. Credit-hour completion ratios, academic coaching data, and grade point average (GPA) were sourced from official records. Correlation and multiple regression analyses explained relationships between independent variables and student success (represented by GPA in college).

Credit hour completion ratios and perceptions of staff nonverbal immediacy showed significant relationships with early-career GPAs. Conversely, willingness to communicate did not directly associate with student success and results for academic coaching were inconclusive. Unexpected findings include, among all students, FYS grade predicted GPA in college.

This study extends scholarship that shows, in early stages of college, students' interactions with others may influence performance and intentional support from others can impact progression. Immediacy research in this setting addresses a void in understanding perceptions of a major portion of undergraduates who do not attend large universities (Furlich, 2016). Implications extend and support theories of interpersonal/instructional communication and models of student success. Roles of professional staff, supportive contexts, and out-of-class communication were considered. Continued research of student-staff interactions in a variety of settings would continue to inform both positive communication and student success literature. Based on their unique contexts, institutions should find ways to embolden campus members, enhance current practices, and encourage impactful student interactions that could enrich experiences and influence success.

Copyright, 2021, by Donna L. Fenton, All Rights Reserved.

This thesis is dedicated to my father, Mr. Kelly, and my grandchildren.

Dad, my earliest and dearest memories are those where you encouraged curiosity, made learning fun, and tirelessly read me stories. Throughout my life, you modeled lifelong learning and continuously support mine. I cherish our talks from different perspectives and our repeated conclusion there is so much more to learn. Your relentless attention to this particular pursuit was both flattering and amusing. A few times, your interest was a single reason to persist. I dedicate this thesis to you.

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## TABLE OF CONTENTS

LIST OF TABLES.....	xii
LIST OF ACRONYMS .....	xiii
Chapter	Page
CHAPTER I: INTRODUCTION.....	1
Problem Statement.....	4
Purpose of Study .....	4
Research Questions.....	4
Background, Significance, and Theoretical Framework.....	5
Background.....	5
Significance.....	7
Theoretical Framework.....	11
Limitations and Assumptions .....	12
Limitations .....	12
Assumptions.....	13
Procedures.....	13
Population, Sample, and Setting.....	13
Instruments and Data Collection.....	14
Definitions of Terms.....	14
Summary and Chapter Overview.....	17
Summary .....	17
Chapter Overview .....	18
CHAPTER II: REVIEW OF LITERATURE .....	19
Student Success in Higher Education .....	20
Conceptual Examination of Student Success.....	20
Prominent Models of Student Success.....	23
Measures of Student Success.....	26
Communication Research in Higher Education.....	30
Constructivism, Communication, and Nonverbal Communication.....	31
Anxiety and Uncertainty Management (AUM) Theory.....	33
Rhetorical and Relational Traditions .....	34
Receiver Characteristics and Influence.....	38
Immediacy and Influence.....	43
Positive Communication, Education, and Practices .....	47
Learning, Motivation, and Engagement.....	48
Student Development and Supportive Others.....	51
Settings, Context, and Climate.....	55
Conclusion .....	58
CHAPTER III: METHODOLOGY .....	60
Research Questions.....	60

Chapter	Page
Research Design.....	61
Population and Setting.....	61
Sample and Context.....	62
Research Variables.....	63
College Grade Point Average (GPA).....	63
Willingness to Communicate (WTC).....	64
Staff Nonverbal Immediacy (NVI).....	64
Credit Hour Completion Ratio (CCR).....	65
Academic Coaching.....	65
Control Variables and Demographics.....	66
Instrumentation.....	68
Willingness to Communicate Scale.....	69
Nonverbal Immediacy Scale for Observers (NIS-O).....	71
Validity of Current Study.....	72
Internal Validity.....	72
External Validity.....	73
Procedure.....	73
Human Subjects.....	73
Institutional Support and Timelines.....	73
Participants.....	74
Data Collection.....	74
Data Management.....	76
Data Reports.....	76
Data Analysis Plan.....	77
Descriptive Statistics.....	77
Inferential Statistics.....	77
Summary.....	79
CHAPTER IV: FINDINGS.....	81
Data Collection Results.....	81
Data Examination and Reliability of Scales.....	83
Willingness to Communicate (WTC) Scale Reliability.....	84
Nonverbal Immediacy Scale for Observers (NIS-O) Reliability.....	84
Descriptive Statistics.....	85
Participants.....	85
Descriptive Statistics of Variables.....	87
Pre-Analysis and Correlation.....	89
Research Question One: Willingness to Communicate and GPA.....	91
Research Question Two: Staff Nonverbal Immediacy and GPA.....	91
Research Question Three: Credit Hour Completion Ratio and GPA.....	92
Research Question Four: Academic Coaching and GPA.....	92
Relationships Among Independent Variables.....	92
Relationships Between Control Variables and GPA.....	93

Chapter	Page
Regression Model for Study Variables .....	95
Research Question Five: Study Variables and GPA .....	97
Other Findings .....	100
Chapter Summary .....	101
CHAPTER V: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS .....	103
Summary of Study .....	103
Summary of Conclusions .....	105
Willingness to Communicate and Student Success .....	106
Staff Nonverbal Immediacy and Student Success .....	107
Credit Hour Completion Ratio and Student Success .....	109
Academic Coaching and Student Success .....	109
Study Variables and Student Success .....	111
Other Results in Student Success .....	111
Limitations .....	113
Known Limitations .....	113
Further Limitations Experienced .....	113
Implications .....	115
Theoretical Implications .....	115
Practical Implications .....	116
Strengths and Weaknesses of Study .....	118
Recommendations for Further Research .....	120
Conclusion of Study .....	122
REFERENCES .....	124
APPENDIX A- WTC Scale, Scoring, and Norms (Original) .....	151
APPENDIX B- WTC Scale (Field Test Version) .....	152
APPENDIX C- WTC Scale (Study Version) .....	153
APPENDIX D- WTC Items and Exploratory Subscale (WTC Staff) .....	154
APPENDIX E- Scales' Permission .....	155
APPENDIX F- NIS-O (Original) .....	156
APPENDIX G- NIS-O (Study Version) .....	157
APPENDIX H- Human Subjects Approval Letter (Host College) .....	158
APPENDIX I- Human Subjects Approval Letter (ODU) .....	159
APPENDIX J- Informed Consent .....	160
APPENDIX K- Contextual Questionnaire .....	162
APPENDIX L- Demographic Sheet .....	163
APPENDIX M- Data Collection Timeline (FUS) .....	164
APPENDIX N- Data Collection Timeline (FYS) .....	165
APPENDIX O- Data Transformation Rationale and Results .....	166
APPENDIX P- Assumptions for Multiple Regression .....	169
APPENDIX Q- Regression Model with Study Variables .....	174

Chapter	Page
APPENDIX R- Sequential Regression .....	182
VITA .....	186

## LIST OF TABLES

Table	Page
1. Staff Support and/or Facilitate Student Engagement.....	53
2. Study and Control Variables by Source and Occurrence.....	67
3. Synthesis of Research Questions and Analyses.....	79
4. Student Perceptions of Staff Departments .....	83
5. Pre-college Characteristics of Participants .....	86
6. Within-college Characteristics.....	87
7. Descriptive Statistics for Research Variables .....	88
8. Independent-Samples <i>t</i> -tests by Class Level.....	90
9. Correlation Coefficients of Research Variables .....	91
10. Correlations Between Control Variables and GPA .....	94
11. Regression Models of GPA on Independent Study Variables .....	97

## LIST OF ACRONYMS

<i>AAC&amp;U</i>	American Association of Colleges & Universities
<i>A_coach</i>	Academic Coaching
<i>APA</i>	American Psychological Association
<i>AUM</i>	Anxiety and uncertainty management theory
<i>CCR</i>	Credit-hour completion ratio
<i>FYS</i>	First-year seminar
<i>FUS</i>	Follow-up seminar
<i>GPA</i>	Grade point average
<i>HIP</i>	High-impact practice
<i>NASEM</i>	National Academies of Science, Engineering, and Medicine
<i>NCES</i>	National Center for Education Statistics
<i>NIS-O</i>	Nonverbal Immediacy Scale for Observers
<i>NVI</i>	Nonverbal immediacy
<i>SAP</i>	Satisfactory academic progress
<i>U.S. DOE</i>	United States Department of Education
URT	Uncertainty Reduction Theory
<i>WTC</i>	Willingness to communicate

## **CHAPTER I**

### **INTRODUCTION**

Completion rates in higher education are a national problem and a global concern. Historically, higher education is a gateway to meaningful work and fulfilled lives (Astin, 1993). Access to higher education has increased. In the United States, new student enrollment grew from nine million in 1980 to 17.3 million in 2015 (Felten et al., 2016; National Center for Education Statistics [NCES], 2020). Unfortunately, completion projections are bleak. National trends show nearly seven million students (40%) who began college in Fall 2015 will not complete a degree or credential within six academic years (NCES, 2020). Scrutiny from stakeholders throughout academia and government results in consensus: Completion rates must improve (Kinzie & Kuh, 2017). In response, actions and approaches vary widely.

Institutions respond with programs and initiatives designed to encourage participation and improve retention (Kuh et al., 2017; Mayhew et al., 2016). Strategic agendas include first-year seminars, learning communities, and academic coaching (Deiorio et al., 2016; Kuh et al., 2017; Young, 2020). While some programs show impressive results (Felten et al., 2016), the problem of completion shows little improvement (Mayhew et al., 2016).

Students' experiences are related to continuance. Learner-centered approaches show success influences students' sense of belonging (Tinto, 2017a), quality of experience (Felten et al., 2016), and perceptions of engagement (Kuh et al., 2005). Students' willingness to engage and seek involvement are behaviors associated with continuance (Astin, 1993; Mayhew et al., 2016; Myers et al., 2002). Cognitive approaches focus on emerging adulthood (Arnett, 2000), motivation (Deci & Ryan, 1985), and meanings made in students' minds (Griffin, 2012).

Student-constructed impressions can influence decisions and behaviors which can impact success (Griffin, 2012; McCroskey & Richmond, 1996).

Students' perceptions of others and interactions with them associate with indicators of success. Communication scholarship contributes scaffolding to success models through research on perceptions and interactions (Goodboy & Kashy, 2017). Mirroring their importance, a wide array of interactions (students with instructors, peers, and staff) appears in historic models of success (Bean, 1980; Spady, 1970; Tinto, 1993). In particular, student-instructor interactions are highlighted in instructional communication (Houser & Hosek, 2018). Students who perceive instructors as approachable (immediate), feel empowered (Houser & Frymier, 2009), motivated (Allen et al., 2006), and intentional toward continuance (Witt et al., 2014).

Communication becomes a confluence for student success research and classroom scholarship; a merge which also accommodates positive institutional practices. Interventions enhance success when perceived by students as positive (Bovill & Felten, 2016). Bovill and Felten (2016) elaborate: Students' positive interactions with others (including faculty and professional staff) influence success through perceived meaning, quality, and value.

Supportive others on campus enact roles that impact continuance (Felten et al., 2019). Professional staff facilitate student engagement, learning, and motivation in many ways. These differ from traditional faculty roles and include emotional support (Deil-Amen, 2011), goal-setting (Bowman, 2020), and sense of belonging (Eblen-Zayhas & Russell, 2019). Student support is deeply embedded in departmental missions of learning centers (Carr & London, 2019), campus living (Paige et al., 2017), and career services (Deiorio et al., 2016).

Multiple relationships influence success (Felten & Lambert, 2020). For institutions intentional about positive communication, student success is a campus-wide campaign (Felten



et al., 2016). Conditions are created to foster frequent opportunities for a multitude of interactions across campus leading to a relationship-rich education for each student (Felten & Lambert, 2020). Particular institutions demonstrate improved success without a staffing increase (Felten et al., 2016). Professional staff comprise approximately 50% of the non-academic workforce in higher education (Gander et al., 2019). Institutions are encouraged to enhance existing human resources and climates through collaborative strategies of empowerment (Felten et al., 2016; Swanson & Holton, 2009).

Multiple roles and disciplines are embraced when student success is conceptualized as an incremental process and a collection of experiences (Tinto, 2017b). Student success viewed as a process shows it is more than program participation, sets of behaviors, or a state of mind (Astin, 1984; Tinto, 2017b). Experiences that contribute to success include students' interactions inside and outside the classroom (Felten et al., 2019; Meyers et al, 2014; Roberts, 2018; Tinto 2017a).

Further characterized by interactant, communication experiences include those with faculty, peers, and staff that add meaning to interactions, support development, and encourage engagement (Felten et al., 2019; Kuh, 2008; Oades et al., 2011). Tinto's (1993) interactionist model is student-focused, aligns with goals within higher education, supports communication inquiries, and allows for positive, prosocial, and hopeful communication (Socha & Beck, 2015).

To explore success, this study considered students' perspectives within Tinto's (1993) model. Student success is understood as an incremental process between admission and completion (Tinto, 2017b). Success is influenced by many factors such as programs (Tinto, 2020), prior experience (National Academies of Sciences, Engineering, and Medicine [NASEM], 2018), interactions with others (Houser & Hosek, 2018), and perceptions of faculty, peers, and staff (Felten et al., 2019).

## **Problem Statement**

In the United States, completion rates in higher education are a historic and perpetual concern. To address a precursor to completion, this study focused on early-career success within college. The problem of this study was to examine settings beyond large research universities and determine how interactions with professional staff relate to early-career student success. Research from large universities suggests students' perceptions, decisions, and behaviors relate to success, but other settings in higher education are not robustly represented (Furlich, 2016). Further, while previous research shows students' interactions with faculty and peers influence success (Hawken et al., 1991; Myers et al., 2014; Yaeger & Walton, 2011), student-staff interactions are insufficiently explored. Finally, professional staff's contribution to student success is under-represented in higher education literature (Graham, 2010; Roberts, 2018; Szekeres, 2011). This study addressed setting and interactant voids. Findings could benefit undergraduates who do not attend large universities and stakeholders who seek to understand their experience (Furlich, 2016). Additionally, findings could clarify staff's role of influence in student success.

## **Purpose of Study**

The purpose of this quantitative study in higher education was to explore small residential campuses and determine how students' early-career success, measured by grade point average (GPA), was affected by their willingness to communicate, perceptions of staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching.

## **Research Questions**

Considering the topic, problem, and purpose, the following research (RQ) questions were formulated and guided this study:

RQ<sub>1</sub>: How does willingness to communicate affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>2</sub>: How does staff nonverbal immediacy affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>3</sub>: How does credit hour completion ratio affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>4</sub>: How does participation in academic coaching affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>5</sub>: To what extent do willingness to communicate, staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching (alone or in combination) affect early-career grade point average of students enrolled in small residential colleges?

## **Background, Significance, and Theoretical Framework**

### ***Background***

The issue of non-completion has puzzled researchers in higher education for nearly 50 years (Mayhew et al., 2016; Pascarella et al., 1986; Spady, 1970 Tinto, 1975). The concept of attrition, or dropping out of college, has an even longer history. Attrition has existed alongside higher education since its inception in the 1600s (Arendale, 2020; Burke, 2019). In reports from 1913 to 1962, the U.S. attrition rate was high and relatively stable at approximately 50% (Bean, 1980; Burke, 2019). Attrition rose to a global concern with the marked increase of enrolled students following World War II (Burke, 2019). Despite decreases in dropout rates over the next several decades, attrition became anchored as an education problem in the United States and several other countries (Bean, 1980).

Attrition was first reported in the literature as a rate (Burke, 2019). The four-year attrition rate of students who enrolled in 1966 was 41.5% (Astin, 1972). Scholars later reported reasons for student drop-out in autopsy-type studies with information obtained after departure (Bean, 1980). As research methods evolved, attrition was explored through improved statistical methods and more variables (Spady, 1970). Approaches were influenced by business, psychology, and sociology sectors which led to frameworks to explain attrition, and later student success (Astin, 1984; Bean, 1980; Kuh et al., 2005; Spady, 1970; Tinto, 1975). As models evolved, a common theme emerged: Students' interactions with others are crucial elements of success (Tinto, 1993). While student success literature continued to develop and informed a macro view, other disciplines contributed with research from inside classrooms and within students.

Instructional communication informs student success from inside the classroom (Farris et al., 2018). Through intersections with educational psychology, pedagogy, and communication studies, instructional communication scholars became experts in classroom settings, messages, students' perceptions, and student-instructor interactions (Farris et al., 2018). Intertwined with perceptions, constructivist psychology posits knowledge and meaning are generated inside the mind through a mix of ideas and experiences (Piaget, 1929). In education, new learning and prior knowledge integrate to create new meanings for students (National Academies of Sciences, Engineering, and Medicine [NASEM], 2018). In communication, constructivism means perception and interpretation of verbal and nonverbal messages (Griffin, 2012). Students' perceptions, meanings made, and resulting decisions influence their success (Hawken et al., 1991). Whether in the mind or classrooms, communication research over several decades combined with student success scholarship and informed the significance of this study.

## *Significance*

The complexity of student success is revealed when described by various stakeholders. Governments refer to success in terms of access and accountability (Association of American Colleges and Universities [AAC&U], 2020; Kinzie & Kuh, 2017). Policy makers consider success increased access for certain populations like first generation and non-traditional students and women in science (Kinzie & Kuh, 2017; NASEM, 2018). When administrators define student success, they often focus on retention (Kerby, 2015; Tinto, 2017b). Students, however, rarely speak of being retained; they are interested in their progress (Tinto, 2017b).

Students' interactions with others influence success (Felten et al., 2016; Tinto, 1975). When two or more participants are in communication, interactions become transactional; participants co-create meanings in their minds as they perceive messages from others (Farris et al., 2018). Verbal messages are important to meanings made, but nonverbal messages may be more important (Richmond & McCroskey, 2004).

Nonverbal communication occurs when behaviors are observed by another (Richmond & McCroskey, 2004). Communication literature emphasizes students' perceptions of others (like instructors) influences their experiences (Farris et al., 2018). When students perceive instructors as credible, affective and cognitive learning increases (Richmond et al., 2018). When perceived as caring, affective learning increases (McCroskey et al., 2014). When students report positive rapport with instructors, anxiety is reduced, and confidence increases (Frisby & Buckner, 2018).

Students' communication characteristics influence success; some inhibit and others enhance communication, behaviors, and learning (Beebe & Frei, 2018). For instance, willingness to communicate is a characteristic that associates with increased social engagement, better

grades, and participation (Beebe & Frei, 2018; Richmond & Roach, 1992). Conversely, communication apprehension negatively relates to participation (Beebe & Frei, 2018).

Immediacy is an influential variable in higher education (McCroskey et al., 2014). Immediacy, described by Mehrabian (1969), is perceived psychological and/or physical distance between interactants. Immediacy behaviors communicate affability and often precede meaningful communication (Mehrabian, 1971). Immediacy is positive and prosocial (Witt et al., 2014). When implemented in classrooms and across campuses, immediacy enhances supportive and affirming climates (Hoy, 2020; Kuh et al., 2017). Kuh et al. (2017) aptly note positive climates can powerfully shrink the psychological size of a campus. Immediacy is often communicated without words or alongside verbal messages (Infante et al., 2001).

Immediacy in higher education is usually measured nonverbally and examined from students' perspectives (Goodboy & Kashy, 2017; Richmond et al., 2018). Allen et al. (2006) showed instructor nonverbal immediacy influenced students' motivation and learning. Houser and Frymier (2009) found students feel empowered when instructors are immediate. Myers & Knox (2001) showed students' information-seeking behaviors associate with instructor immediacy. Further, Witt et al. (2014) showed instructor nonverbal immediacy increases students' intent to persist in college.

Nonverbal immediacy shows importance beyond traditional classrooms. In online learning, immediacy is explored between students and instructors, peers, and content (Garrison et al., 2000). Immediacy principles are applied to environments outside of education such as corporations (Myers, 2017), psychology (Patterson, 2019), and medicine (Makoul et al., 2007; Polack et al., 2008). Despite its flexibility as a variable, some applications of nonverbal

immediacy are sparse. Interactions outside the classroom and those with sources other than faculty require more exploration (Myers & Martin, 2018).

All student communication within college has potential to influence progression through positive relationships (Felten & Lambert, 2020) and include formal, informal, social, and academic interactions (Tinto, 2017a). Interactants include faculty, peers, and staff (Felten et al., 2019). Scholars note as interactants, staff are nearly absent from higher education literature (Graham, 2010; Roberts, 2018; Szekeres, 2011). In non-empirical discussions, literature explains professional staff as important to institutional goals (Felten et al., 2019), experiential learning (Kuh et al., 2017), student support (Roberts, 2018), and informal communication (Felten & Schroeder, 2017). This absence underscores a need to empirically examine student-staff interactions.

Positive psychology and communication influence student success. Positive psychology is a dynamic branch of its parent discipline that focuses on well-being, thriving, and flourishing (Seligman et al., 2009). Enacting positive psychology, positive communication enhances practices, messages, and meanings made within and between individuals and groups (Pitts & Socha, 2013; Seligman et al., 2009; Socha & Beck, 2015; Socha & Pitts, 2012).

Institutional practices influence success, have existed since the 1990s, and continue today through various revenue streams and countless program initiatives (Kuh et al., 2017; Pascarella & Terenzini, 2005; Tinto, 2017b). First-year seminars are programs designed to influence retention, adaptable to contexts, and exist on most campuses but differ in implementation and/or form (Padgett et al., 2013). One type of first-year seminar (extended orientation) features content such as study skills, stress management, and motivation (Young, 2020). When linked to another course, students share course commonality with peers, forming a learning community (Kuh,

2008). Learning communities encourage positive relationships between students, enhance engagement, and are associated with both short- and long-term positive outcomes (Kuh, 2008, 2009). Outcomes of first-year seminars are less clear with positive results on some campuses, negative outcomes on others, and mixed results overall (Felten et al., 2016; Tinto, 2017a). Further research is encouraged to understand how variances in program type, contextual iterations, and students served influence outcomes (Kahu et al., 2020).

Academic coaching is a support service that associates with student success (Padgett et al., 2013). Existing in higher education since 2000, academic coaching is enacted in a variety of modes and frequencies which makes programs difficult to compare (Bettinger & Baker, 2014). For these reasons, academic coaching requires more exploration (Capstick et al., 2019; Pechac & Slantcheva-Durst, 2019).

Academic coaching, first-year seminars, and learning communities are examples of institutional efforts to encourage interactions between students and others (Oades et al., 2011; Paige et al., 2017). Often not explicated in these settings is the students' role. Astin (1984) reminded scholars decades ago that students must be willing and active participants for true involvement to occur; this wisdom remains relevant (Felten et al., 2019).

Student effort varies with individual differences and more variance is introduced as they perceive and respond to time, place, and other setting and context factors (Kaplan et al., 2020). Students' perceptions of size and type of institutions, class size, and institutions' emphases on teaching, learning, and research can influence involvement (Astin, 1984; Schmidt & Graziano, 2016). Furlich (2016) identified a setting gap in immediacy research (which heavily represents students from large research-based universities) and called for extended research to understand experiences of those who attend colleges/universities of different types.



This overview showed student success as a multifaceted concept and complex process in need of further study. Student success is well-studied across decades and disciplines yet some aspects of are not fully explored. For example, literature on professional staff's contribution to student success is not robustly represented (Graham, 2010; Roberts, 2018; Szekeres, 2011). While previous communication research shows students' interactions with faculty and peers influence success (Hawken et al., 1991; Myers et al., 2014; Yaeger & Walton, 2011), student-staff interactions are not sufficiently explored. Additionally, scholars call for exploration of academic coaching (Capstick et al., 2019; Pechac & Slantcheva-Durst, 2019), continued research of first-year seminars (Young, 2020) and scholarly exploration of settings that differ from large universities (Furlich, 2016).

The problem of this study was to examine settings beyond large research universities and determine how interactions with professional staff relate to early-career student success. The purpose of this quantitative study was to explore small residential campuses and determine how students' early-career success, measured by GPA, was affected by willingness to communicate, perceptions of staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching. This study was conceptually informed by Tinto's (1993) interactionist model, including the choice of variables. These decisions were also supported theoretically.

### ***Theoretical Framework***

Gudykunst's (1993) anxiety/uncertainty management theory (AUM) provided the theoretical foundation of this study. As college students perceive persons, processes, and place, meanings are made in their minds (Griffin, 2012; NASEM, 2018; Piaget, 1929). Welcoming and caring impressions can enhance students' personal development and progression (Felten et al., 2019; Socha & Beck, 2015). AUM explores intentional communication behaviors and strategies

that manage anxiety/uncertainty while orienting new group members (Neuliep, 2016). In this way, AUM theory aligns with efforts of campus members and programs designed to support students' early-career success.

AUM theory is an interpersonal communication theory often applied to intergroup settings (Gudykunst, 1993; Neuliep, 2016). Tenets of AUM theory align with students' transition to college culture, interactions with others, and management of communication relationships (Gudykunst, 1993; Neuliep, 2016; Witte, 1993). Further, AUM theory shares concepts with student success models such as sense of belonging and willingness to invest time (Astin, 1984; Tinto, 2017b). Finally, AUM theory acknowledges both context and responsive communication have roles in adjustments, decisions, and actions (Kaplan et al., 2020; Neuliep, 2016).

Research supports quantitative inquiries with interpretive elements (Griffin, 2012). Broad theories like constructivism and positive psychology encourage inquiries that examine both objective and subjective variables (Deci & Ryan, 1985; Griffin, 2012). For this study, Tinto's (1993) interactionist model was the conceptual frame and informed choice of objective variables. Within the interactionist model, subjective measures were chosen from instructional communication, theoretically supported by AUM, and contextually situated. Interdisciplinary sources put forth a unique and researchable perspective that may contribute to extant knowledge of student success.

## **Limitations and Assumptions**

### ***Limitations***

The limitations of this study include:

1. Data collected were limited to one higher education institution.

2. Results may or may not be generalizable to other colleges of similar type. This limitation was reduced through detailed descriptions of sample demographics and transparent explanations of data collection, observations, and context (Kaplan et al., 2020).
3. Based on contextual factors and iterations of program implementations, results may or may not be generalizable to other institutions that employ similar student support.
4. Safety measures implemented during a pandemic including social distancing and mask policies may have influenced variables measured.

### ***Assumptions***

This study was based on the following assumptions:

1. The participants will complete questionnaires in an honest manner.
2. Instructors of first-year seminars and follow-up seminars, both faculty and staff, will behave as if they respect the research while the instruments are completed.
3. Institutional databases are current and complete.
4. Instruments administered will measure variables described in this study.

### **Procedures**

This quantitative study was non-experimental, cross sectional, correlational, and explanatory. Independent variables were students' willingness to communicate, perceptions of staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching. The dependent variable was GPA (within college).

### ***Population, Sample, and Setting***

The target population of this study is full-time, traditional, and early-career U.S. students enrolled in small residential four-year colleges that provide campus support programs like first-year seminars, learning communities, and/or academic coaching. The sample of this study was

full-time, traditional, early-career students enrolled in a small residential liberal arts college (four-year) that provided campus support programs including first-year seminars (freshmen) and follow-up seminars (sophomores). Students had experience with learning communities; some had participated in academic coaching.

The host college is located in the Midwest region of the United States. The site is categorized as small (undergraduate enrollment between 1,000 and 2,999) and residential (at least 50% are full-time students and 24% live on campus; Carnegie, n.d.). The institution identifies as a private and small residential liberal arts college (Marietta College, n.d.).

### ***Instruments and Data Collection***

The Willingness to Communicate scale (McCroskey, 1992) and Nonverbal Immediacy Scale for Observers (Richmond et al., 2003) measured students' willingness to communicate and perceptions of staff nonverbal immediacy respectively; both instruments are established measures in social science literature. The researcher administered instruments to sophomore students near midterm in Fall 2020. Similarly, freshman students completed research materials after midterm. Instrument completion yielded two subjective variables per participant. The researcher collected objective variables (number of academic coaching sessions, GPA, and precursors to credit hour completion ratio) at semester's end, sourced from the host college's academic databases with appropriate permissions.

### **Definitions of Terms**

The following terms were operationally defined for this study:

*Academic coaching:* a developmental process in higher education; coaches assist students in general campus navigation and skills like time management, study strategies, and adjustment to college (Pechac & Slantcheva-Durst, 2019).

*Attrition*: non-continuance in subsequent semester of college (Tinto, 1997).

*Communication*: the process of one person stimulating meaning in the mind of another through verbal and/or nonverbal messages (McCroskey & Richmond, 1996).

*Credit hour completion ratio (CCR)*: a student measure of achievement and/or progression; equal to hours completed divided by those attempted; a guideline for satisfactory academic progress (SAP); and values of .67 and above comply with U.S. financial aid criteria (U.S. Department of Education [U.S. DOE], 2019).

*Dyad*: interpersonal communication which occurs between two individuals.

*Engagement*: “students’ intentional, proactive, and constructive contribution” to learning and activities (Reeve, 2012, p. 161); a student experience (Kuh, 2008) equivalent to involvement (Astin, 1993), and integration (Tinto, 1975).

*First-year seminars (FYS)*: courses designed to enhance students’ adjustment to college (Young, 2020). First-year seminars are among high-impact practices (HIP) identified by Kuh (2008), sponsored by the AAC&U, and shown to influence student engagement.

*High-Impact Practices (HIP)*: practices identified by Kuh (2008) and sponsored by the AAC&U that include first-year seminars (including those extended beyond year one) and learning communities.

*Higher education*: post-secondary institutions in the United States including community colleges, public and private universities, and colleges of any size.

*Immediacy*: the degree of perceived physical and/or psychological closeness between interactants; immediacy communicates approachability and affability (Infante et al., 2003).

*Learning communities*: programs designed to encourage engagement; groups of students have course schedule commonality; and one of AAC&U’s multiple HIPs (Kuh, 2008).

*Nonverbal communication*: the process of one person stimulating meaning in the mind of another through nonverbal messages (Richmond & McCroskey, 2004).

*Nonverbal Immediacy (NVI)*: perceived psychological and/or physical closeness between sources and receivers resulting from behaviors which are not verbal (Infante et al., 2003).

*Persistence*: continuance from one semester to another while enrolled in a higher education institution (NCES, 2020; Tinto, 2017b).

*Professional staff/staff*: employees of a higher education institution which are not faculty; non-academic staff (Felten et al., 2019).

*Receiver*: those for whom messages are designed for and/or delivered to in communication interactions (McCroskey & Richmond, 1996).

*Retention*: continued enrollment from first to second year (Tinto, 2017a).

*Satisfactory academic progress (SAP)*: Federal criteria for continuance that includes full-time status, grade point average, and a student's credit hour completion ratio (U.S. DOE, 2019).

*Small residential colleges*: colleges who enroll 1,000 to 2,999 students, 50% or more are full-time, and 24% or more live on-campus (Carnegie Classification of Institutions of Higher Education [Carnegie], n.d.). Small colleges are further categorized as highly residential if at least 80% are full-time and at least 50% live on-campus (Carnegie, n.d.).

*Source*: interactant who originates message in communication transactions (McCroskey & Richmond, 1996).

*Student success*: an individual process in higher education that occurs incrementally between admission and completion (Tinto, 2017b).

*Trait-like variable*: a communication characteristic which is unique to a person's personality; tendencies of communication behaviors related to a trait (McCroskey et al., 2014).

*Transactional Communication Model*: a model of interpersonal communication illustrated through five components: source, receiver, message, co-constructed meaning, and context (Farris et al., 2018).

*Willingness to Communicate (WTC)*: a trait-like variable; tendency to initiate talk in a variety of settings; and a communication characteristic unique to an individual which remains rather stable across contexts and cultures (McCroskey & Richmond, 1987).

## **Summary and Chapter Overview**

### ***Summary***

This discussion began with the chronic issue of college completion in the United States and framed student success within college as a researchable precursor (Tinto, 1993). Student success is conceptualized as a collection of experiences and defined as an individual process that occurs incrementally between admission and completion (Tinto, 2017b). A synopsis of institutional effort and classroom research revealed a common theme: Students' perceptions and interactions with others influence progression through college (Felten & Lambert, 2020). This theme is supported by several prolific research streams, yet some aspects of students' perceptions and interactions have not been sufficiently explored (Myers & Martin, 2018). The literature gaps reviewed can be categorized as voids in settings, programs, and interactants.

The significance of this study is supported conceptually by Tinto's (1993) interactionist model and theoretically by the anxiety/uncertainty management theory (Gudykunst, 1993). Both narrowed the problem to a researchable purpose and guided the choice of variables. The purpose of this quantitative study was to explore small residential campuses and determine how students' early-career success, measured by GPA, was affected by their willingness to communicate, perceptions of staff nonverbal immediacy, credit hour completion ratio, and

participation in academic coaching. This study addressed literature gaps of setting (size different from large universities) and interactant (professional staff). Findings could benefit undergraduates who do not attend large universities and stakeholders who seek to understand their experience (Furlich, 2016) and clarify professional staff's influence on student success.

### ***Chapter Overview***

This chapter introduced the present study which focused on early-career success within college. Background literature was discussed which led to the significance of this study, reinforced through literature gaps identified. The research problem, purpose of the study, and five research questions were stated. Limitations and assumptions were listed. Procedures were explained including target population, sample, and setting; instruments used to collect subjective variables; and source of objective data. Terms were operationalized for this study and defined. This chapter concluded with a summary and this overview.

The next chapter reviews literature from three broad areas: student success, instructional/interpersonal communication in higher education, and positive communication/education/practices. Chapter III describes the study's design and explains procedures used to collect, measure, and analyze data. Chapter IV reports findings generated from descriptive and inferential statistical analyses. Based on findings, Chapter V draws conclusions, makes inferences, and discusses both in the context of extant literature. Recommendations for further research and practice are discussed and an overall conclusion ends the narrative of this study. References and appendices finalize this report. Approval letters from human subjects' committees, informed consent, each instrument and permissions for their use, and statistical outputs are appended.



## **CHAPTER II**

### **REVIEW OF LITERATURE**

This review of literature begins with student success scholarship. Historical literature reveals various meanings of student success and introduces related concepts like attrition, persistence, and retention (Astin, 1972; Burke, 2019; Mayhew et al., 2016). As theoretical models are highlighted, key constructs emerge such as integration (Tinto, 1975), involvement (Astin, 1984) and engagement (Kuh, 2009). Authentic higher education settings are emphasized and measures of student success are explored (Ellison et al., 2020; Kinzie & Kuh, 2017).

This review proceeds with an exploration of interactions, the building blocks of integration (Burke, 2019). Students' interactions are examined as interpersonal transactions (Farris et al., 2018). Communication scholarship illustrates how students co-construct meaning (Griffin, 2012) and contributes depth to many factors of success (Houser & Hosek, 2018). A myriad of examples shows students' perceptions influence their experiences (Houser & Hosek, 2018; Richmond & McCroskey, 2009). This discussion untangles the complexities of transactions and conveys how students' characteristics, perceptions, and communication tendencies contribute to their progression (Hawken et al., 1991).

This review concludes with discussions of positive communication, education, and institutional practices that impact student success through learning, motivation, and engagement. Examples of outcomes influenced by supportive others and institutional programs are discussed. Broad areas of literature reviewed converge to re-emphasize success as an incremental and dynamic process, informed by many disciplines, but personally experienced by students.

## **Student Success in Higher Education**

Student success is important to governments, organizations, college administrators, faculty, staff, and students (Kahu et al., 2020). This section defines student success from perspectives of various stakeholders. Similarly, terms that preceded engagement (integration and involvement) are traced and their convergence explained. Historical inquiries of the student journey are analyzed, including three seminal models of student attrition. A conceptual path is sketched from student attrition to success and a scholarly shift toward a positive approach is noted. Research that applies to current models of student success are discussed.

### ***Conceptual Examination of Student Success***

Governments speak of student success in terms of equity, access, affordability, and accountability (AAC&U, 2020; Kinzie & Kuh, 2017). Community members consider college success a degree or credential (Kuh et al., 2006). For policy makers, student success means narrowed achievement gaps for certain populations like first-generation college students, women in science, and non-traditional students (Kinzie & Kuh, 2017; NASEM, 2018). To predict success, higher education administrators focus carefully on continuance rates from year one to year two, known as retention (Kerby, 2015). Rates like retention and completion quantify success, but omit processes that influence results (Tinto, 2017b).

Faculty are interested in developing students' knowledge, skills, capacities, and competencies necessary to progress within a program and/or operate in the larger world (Kilgo et al., 2015). Tinto (2017b) further distills success to individual experiences, illustrated when he explains, "when one speaks to students... from their perspective... one does not hear students speak of being retained" (p. 2). Instead, students speak of courses, semesters, and their progress (Tinto, 2017b).

Student success can be described expansively. A generous definition includes students' readiness for college-level learning before arrival, equitable enrollment consistent with national goals, participation in high-quality learning, continued persistence culminating in demonstrable proficiencies, completion within a reasonable time frame, attainment of a marketable degree or credential, procurement of meaningful work, continued education or entrance into workforce with employable skills, and a sustained positive attitude toward lifelong learning (Butrica et al., 2020; Kinzie & Kuh, 2017; Zepke & Leach, 2010). All these factors are important, but too numerous for a single inquiry that still reflects students' perspectives.

Alternatively, many scholars manage studies with meaningful scopes that also include students' experience (Mayhew et al., 2016). Time frames range from cross-sectional moments to durations of a course, semester, or academic years (Kuh et al., 2006; Tinto, 2017a, 2017b). All can be conceptualized as incremental parts of the student journey (Roberts, 2018).

Students' journeys can be described as a collection of experiences within college (Tinto, 2017a). Experiences include students' interactions with others, both inside and outside the classroom (Roberts, 2018). Student success is succinctly defined as an individual process which occurs incrementally between college admission and completion (Tinto, 2017b).

As students' journeys were explored, interactions with others emerged as important (Astin, 1993; Kuh, 2009; Pascarella & Terenzini, 1980; Tinto, 1997). Tinto (1997) theorized when students interact with others, positive interactions lead to integration (academic and social). Tinto further explains integration predicts continuance. Repeated continuance leads to completion (Tinto, 2017a). Continuance from one semester to another is termed persistence (Tinto, 2017a). Conversely, non-continuance is termed attrition (Tinto, 1997).

Attrition exists along-side higher education since its inception of in the 1600s (Arendale, 2020; Burke, 2019). In reports from 1913 to 1962, the U.S. attrition rate was high and relatively stable at 50% (Bean, 1980; Burke, 2019). Attrition became a global concern with enrollment increases that followed World War II (Burke, 2019). Despite decreases in dropout rates over the next several decades, attrition became anchored as an education problem not only in the United States, but also Australia, Canada, and Great Britain (Bean, 1980).

Early attrition literature was a singular census-type format which continued for several decades (Kerby, 2015). From a national sample of U.S. colleges and universities, Astin (1972) reported student attrition was 41.5% in 1970, among those first enrolled in four-year programs in 1966. Scholars later expanded methodologies and conducted autopsy-type studies (Kerby, 2015). Autopsy research yielded more information, but still inadequately explained attrition (Kerby, 2015). Students who left institutions (and could be reached) were asked to self-report reasons for drop-out (Bean, 1980; Spady, 1970). Prediction studies emerged next, using admission variables like demographics and high school GPA as predictors for attrition (Spady, 1970).

As explanatory variables increased in quantity, their meanings were not static. For example, maternal education currently predicts children's achievement (Jackson et al., 2017), but a four-year degree from either parent may influence college success (Mayhew et al., 2016). In contrast, historical attrition studies (before 1990) considered paternal education to help explain student performance (Jackson et. al., 2017; Spady, 1970). As new variables were identified, statistical methods evolved toward analytical-explanatory designs (Burke, 2019; Kerby, 2015). These technological advances contributed to development of conceptual and theoretical frameworks and models of student success (Kerby, 2015).

### ***Prominent Models of Student Success***

Theorists Spady (1970) and Tinto (1975) based their early models on Durkheim's (1961) sociological theory of suicide (Kerby, 2015). Later, attrition was viewed as a process from a psychosocial perspective (Kerby, 2015). Kerby (2015) synthesized the theories put forth by Spady and Tinto: students entered academic and social domains, did not integrate into new groups (sociology), experienced alienation and isolation (psychology), and left college (psychosocial attrition). Also termed academic suicide (Spady, 1970), attrition can be viewed as the anti-social dark side of student success (Socha & Pitts, 2012). While negative nomenclature (autopsy, dropout, and suicide) has mostly disappeared, some remnants of blaming the victim (student) can resurface when departure is discussed and/or explored (Tinto, 2020).

Of the three seminal models, Bean's (1980) is the most mathematical and systematic as organizational principles of workplace turnover are applied to student attrition. It identified strength of interactions between variables and causal paths to student success (Burke, 2019). For example, Bean showed student-student relationships were stronger predictors of social integration than informal student-faculty interactions (Burke, 2019).

Both Spady (1970) and Tinto (1975) relied on student-institution relationships to explain serial interactions that could lead to integration. Spady pioneered the suggestion that institutions have a role in failed integration. He considered the combination of poor performance and reduced personal connections could cause attrition. Further, Spady shifted blame away from students, questioned institutions' role, and posited both parties are interactants in student-institution relationships. Tinto extended Spady's theme and directed institutions to influence persistence through prescribed actions (Braxton, 2019). Results of this resonating shift continue throughout higher education (Kinzie & Kuh, 2017).

Tinto's (1993) model, modified through the years, is the interactionist model. It is the most cited, accepted, and applied framework in student success literature (Aljohani, 2016; Burke, 2019). The name change reflects a positive, prosocial orientation to a longitudinal process (Braxton, 2019; Socha & Beck, 2015). While it garners criticism as less accurate in community colleges than four-year institutions, less predictive for certain groups like non-traditional students, and variable in its explanatory power, much scholarly evidence shows Tinto's (1993) model applicable to many types of students and institutions (Burke, 2019).

For example, in a qualitative study, Deil-Amen (2011) interviewed 125 students from seven two-year community colleges. Deil-Amen's sample was traditionally aged, 76% first-generation, and 81% low to middle income. College settings were small and large, urban and rural, and private and public (Deil-Amen, 2011). In each setting, students described social and academic experiences and identified "agent(s)" (p. 61) who facilitated their adjustment to college (Deil-Amen, 2011). Deil-Amen describes agents as faculty, instructors, staff, and peers. Nearly all students (92%) reported agent(s) who enhanced their comfort, competence, and sense of belonging (Deil-Amen, 2011). Deil-Amen supports Tinto's (1993) updated model in important ways: Journeys were verbalized from students' perspectives, supported by influential others, and impacted by faculty, staff, and peers.

Tinto's (1993) model adapted to graduate settings illustrates its flexibility (Braxton, 2019; Mayhew et al., 2016). In a case study reporting experiences of pharmacy students, Choi et al. (2019) applied Tinto's interactionist model and explained how interpersonal relationships influence continuance. One student performed poorly and exhibited low self-efficacy; these beliefs hindered interactions with peers and professors (Choi et al., 2019). In a second attempt, they joined a study group (informal interaction), sought support (formal interaction), improved

performance, and persisted to the next semester (Choi et al., 2019; Tinto, 1993). These findings suggest students' efforts combined with institutional support influenced success (Astin, 1993; Choi et al., 2019).

**Other Conceptual Influences.** Astin's (1984) theory of student involvement and holistic development are notable; he emphasized meaningful student-faculty interactions leads to learning and continuance. Astin's model has an easy cadence of input, environment, and output; student involvement happens within the environment. Student involvement can be considered an institutional factor (through activities offered), a student factor (through tendency to participate), and is conceptually related to interaction, integration, and engagement. Astin stressed students' role in involvement requires time on task and energy to build quality relationships.

Kuh et al.'s (2005) model adds engagement to the success path. Kuh et al. acknowledges all interactions contribute but maintains student-faculty interactions are most influential to student success. From Australia, Kahu's (2013) explains engagement as a psychosocial state. Kahu's model shows socio-cultural influences as a cloud, student engagement in its center, and complex forces/sub-forces acting within the cloud. Kahu illustrates student success' complexity and reinforces why paths from enrollment to completion remain unclear. Pascarella and Terenzini (1980, 2005) emphasize the large quantity of factors scholars should consider when explaining engagement. While complex, engagement (Kuh et al., 2005) is similar to involvement (Astin, 1984) and integration (Tinto, 1975).

Tinto's (1993) model drew criticism because motivation was not among student factors (Aljohani, 2016). Tinto (2017b) showed his motivation theory fits within his model. Tinto (2017b) describes motivation through three dimensions: self-efficacy, sense of belonging, and

perceived value of content. These abstract elements likely explain student success more fully, but quantification challenges stakeholders interested in outcomes (Tinto, 2017b).

### ***Measures of Student Success***

Measuring student success is not straightforward. Some objective measures simply indicate goals attained (Ellison, 2020; Kinzie & Kuh, 2017). Conversely, some subjective measures designate concepts that appeal to students' feelings, e.g. satisfaction, but not achievement (Kahu, 2013; Mayhew et al., 2016; Mazer & Graham, 2015). Scholars advise careful choice of measures to represent student success (Kinzie & Kuh, 2017).

**Institutional Measures.** At the institutional level, multivariate studies are recommended but, unfortunately, are rare and bivariate studies are not common practice (Ellison et al., 2020). Instead, for many institutions, retention rate is a univariate focus (Ellison et al., 2020). To reactively explain departure, retention research can further devolve to autopsy studies (Ellison et al., 2020). These tactics ignore theory and are discouraged (Ellison et al., 2020). Ellison et al. (2020) re-states success is a longitudinal process of progression involving many influences. Likewise, not one reason, but many factors over time contribute to student departure (Burke, 2019). To examine student success with fidelity, Kinzie and Kuh (2017) recommend institutions focus on outcomes that include accomplishment. Retention, widely considered an institutional outcome, does not qualify (Ellison et al., 2020; Kinzie & Kuh, 2017).

**Student Outcome Measures.** Student measures contrast with institutional metrics (enrollment and retention) and reflect what students do over time: continue, persist, complete, and graduate (Kinzie & Kuh, 2017). For example, Mayer et al. (2020) found use of library services in one semester explained increased persistence rates in subsequent semesters in an



unstated number of undergraduate students. In this way, Mayer et al. showed students' use of one type of support service (at one university) influenced their likelihood of continuance.

***Grade Point Average (GPA).*** GPA is a student outcome measure, not a rate, but a common measure of success (Silva & White, 2015). Calculated using the standard credit hour, GPA is commonly used by students tracking their own progress (Silva & White, 2015). In student success models, GPA in college is positively influenced by academic experiences, interactive programs, and active learning (Mayhew et al., 2016). High school GPA is a potent predictor for student success within college; college GPA strongly predicts persistence and retention (Mayhew et al., 2016; Tinto, 2012).

GPA earned can represent achievement, a high GPA may signify success, and GPA increase over time can illustrate progression (Mayhew et al., 2016). Bowman (2020) operationalized success as change in GPA for 113 engineering students at a large research university. Bowman found students' GPA increases associate with a goal-setting intervention. From Spain, Hernandez et al. (2020) chose weighted GPA to measure academic performance in 443 Sports Science majors from Portugal. Hernandez et al. found students' psychological needs mediated the positive relationship between perceived support and academic performance. In these studies, both dynamic and static outcomes (change in GPA and weighted GPA) reflected student accomplishment (Bowman, 2020; Hernandez et al., 2020; Kinzie & Kuh, 2017).

GPA is criticized as one-dimensional (Meadows et al., 2019). In an honors program that did not require GPA for admission, Meadows et al. (2019) explored GPA in 31 participants and notes had 3.50 been the cut-off, seven students would have been excluded. Yet, these same students thrived in an environment of self-authorship, adding to Meadows et al.'s conclusion that GPA is not a strong measure of learning in their particular context. No measure is ideal. Astin

(1993) warns single-measure reliance limits holistic views of success. Fortunately, other measures exist, including GPA's antecedents.

***Credit Hours.*** Since the early 1900s, credit hours have served as currency in higher education and allow public, private, non-profit, and for-profit institutions to recognize one another's credits and degrees (Silva & White, 2015). Consequently, credit hours are imbedded in transactions: accreditation, admissions, degree requirements, federal financial aid, and transfers; they can also measure progress and achievement (Silva & White, 2015). For example, Kwenda (2014) explains progress toward completion by dividing earned credit hours by number required to graduate. Attempted hours subtracted from those earned reveals extra hours, or credits "wasted" (p.47), which is costly to students, institutions, and governments (Kwenda, 2014). Using 2004 Florida data, Kwenda explains students earned 720,000 hours not applicable to a degree or certification, costing the state 62 million dollars. Further, for students, wasted hours negatively associate with completion and likely have psychological impacts (Akos, 2020).

In the case of unsatisfactory (U), withdrawn (W) and failure (F), credits are attempted but not completed (Akos, 2020). To preserve GPA, Akos (2020) explains, students may strategically withdraw. Akos conceptualizes withdrawals as student behaviors related to departure. In contrast, grades of D and F are experiences; earning a D grade is similar to experiences of persistence. Akos explored students ( $N = 126,034$ ) at nine universities with 30 credits in two semesters. Akos found students with one or two D grades were low-risk for attrition, but those with one or two withdrawals were high-risk, near the attrition level of students with one or two F grades. Akos notes most retention models use GPA and do not include impacts of withdrawn credits. Akos calls for more research regarding this option.

***Credit Hour Completion Ratio.*** Like GPA, credit hour completion ratio can reflect achievement and/or progression (Kwenda, 2014). This ratio equals credit hours completed divided by those attempted, resulting in a value between zero and one (Kinzie & Kuh, 2017; Kwenda, 2014; U.S. DOE, 2020). Credit hour completion ratio is a national guideline for satisfactory academic progress (SAP); calculated values of .67 and above comply with U.S. financial aid criteria (Kwenda, 2014; U.S. DOE, 2020). For ratios of one, credit hours completed equals number attempted (Kwenda, 2014). Kwenda (2014) explains students whose credit completion ratios are under one demonstrate progression in subsequent semesters if completion ratios increase. For 15 community colleges, Pechac and Slantcheva-Durst (2019) explored many factors that could influence student success ( $N = 5,808$ ) in one semester. Pechac and Slantcheva-Durst found 31.5% of variance in credit hour completion was explained by 17 factors in three categories (student, institutional, and interventional).

To indicate persistence, credit hour completion ratios can be expressed as a percentage (Ruffalo Noel Levitz, 2015). When census data from 259 institutions were collected and divided by type of institution, Ruffalo Noel Levitz (2015) described median credit hour completion ratios ranged from 80% (two-year public,  $n = 59$ ) to 93% (four-year private,  $n = 146$ ) in one fall semester. Akos (2020) reports ratios below 80% reduce the likelihood of completion by half.

In recent dissertation work, Curtis (2017) found exposure to part-time Career and Technical Education (CTE) instructors influenced students' ( $n = 2,309$ ) credit hour completion ratio at one large urban community college. Curtis equated success as credit hour completion ratios of .67 or greater. Calculated after two semesters for each student, Curtis found a significant and positive relationship between exposure to part-time CTE instructors and student success. Other factors (gender, age, and full-time status) were stronger predictors of student success than

exposure to part-time CTE instructors. Curtis' results add to Tinto's (1993) model: No single factor accounts for success.

Even with many choices of measures, student success is difficult to quantify and define (Kahu, 2013). The confusion is underscored by Deeken et al. (2019) who summarized findings from a qualitative study. Deeken et al. interviewed librarians from eight institutions through correspondence. When asked to define student success, one did not provide a definition, four described activities and programs, and three answered quantitatively: retention rate, GPA, and credit hour completion (Deeken et al., 2019).

Overall, this synthesis of student success literature showed Tinto's (1993) interactionist model a favorable framework to examine progression. Student success is defined as an individual process in higher education which occurs incrementally between admission and completion (Tinto, 2017b). Throughout the process, incremental engagement leads to continuance; repeated continuance leads to completion (Astin, 1993; Kuh et al., 2006; Tinto, 1993). At every stage, students' perspectives should be considered (Tinto, 2017b). When supported and enhanced, the interactionist model is positive, prosocial, and hopeful (Burke, 2019; Kinzie & Kuh, 2017; Socha & Beck, 2015). Integration is a collection of interactions (Tinto, 2017b). The next section explores students' interactions from their point of view.

### **Communication Research in Higher Education**

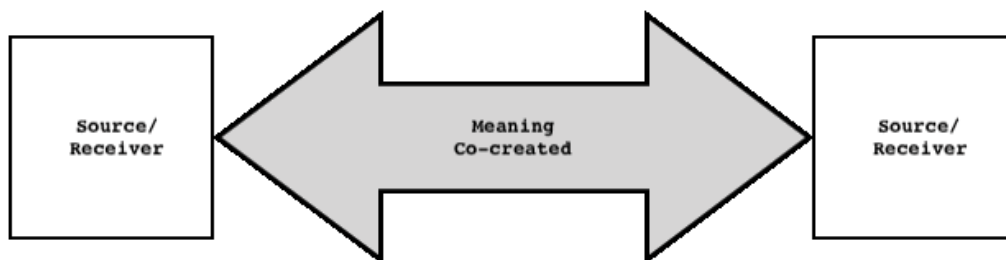
Students' experiences are examined as interpersonal interactions in a variety of contexts. Communication scholarship, especially instructional and interpersonal communication, contributes insight to interactions within higher education that influence student success (Houser & Hosek, 2018). Communication literature showcases variables of perception and connects their utility to student success inquires (Hess & Mazer, 2017).

### ***Constructivism, Communication, and Nonverbal Communication***

Constructivism is an overarching theory in psychology, education, and communication (Woolfolk, 2016). In psychology, Piaget (1929) posited knowledge is constructed in the mind through interactions between experiences and ideas. Griffin (2012) notes modern constructivism, applied to learning contexts and social settings, extend Piaget's early work. In education, it is applied to learning; students create new meaning as prior knowledge integrates with new information (NASEM; 2018 Woolfolk, 2016). Learner-centered educators consider prior knowledge and facilitate a broader understanding of content as new information is incorporated (Woolfolk, 2016). In communication, constructivism is applied to messages (Griffin, 2012). Messages are interpreted in the minds of those who perceive them (McCroskey & Richmond, 1996). Communication is the process of a person stimulating meaning in the minds of others through verbal and nonverbal messages (McCroskey & Richmond, 1996). This definition aligns with the transactional model of communication depicted in Figure 1 (Farris et al., 2018). In communication transactions, each participant is simultaneously source and receiver; interactants co-create shared meaning through verbal and nonverbal messages (Farris et al., 2018).

**Figure 1**

#### *Transactional Model of Interpersonal Communication*



*Note.* Adapted from Farris et al. (2018, p. 6).

Nonverbal messages are crucial components of interpersonal transactions and often contribute more meaning than verbal messages (Mehrabian, 1969; Richmond & McCroskey, 2009). Nonverbal communication occurs when behaviors are observed by another (Richmond & McCroskey, 2004). Richmond and McCroskey (2004) explain, when one person observes another, meaning is stimulated in the minds of observers (receivers). Richmond and McCroskey (2004) note, nonverbal communication is perpetual; while in the “presence of another human being, *you cannot not communicate*” (p. 4, emphasis in original).

Nonverbal behaviors have potential to form communicative messages in receivers’ minds (Richmond & McCroskey, 2004). Because nonverbal communication is continuous, nonverbal behaviors can be intentional, unintentional, and/or accidental (Mehrabian, 1969; Richmond & McCroskey, 2009). Thousands of nonverbal behaviors are known, but common examples are smiles, eye contact, nods, posture, forward leans, gestures, vocal variety, and non-invasive touches (Anderson, 1979; Infante et al., 2003; Richmond & McCroskey, 2004). While nonverbal behaviors can be learned or improved, the actual behaviors are not nearly as important as how they are perceived (Richmond & McCroskey, 2004).

Beyond its display in observable behaviors, nonverbal communication also accompanies verbal messages (McCroskey et al, 2014). Every word (written, spoken, or mediated) carries a potential nonverbal message (Mehrabian, 1969; Richmond & McCroskey, 2009). Scholars estimate when meaning is made from a message, most meaning comes from the nonverbal portion (Richmond et al., 2001). Quantifying both verbal and nonverbal messages, Mehrabian and Ferris (1967) estimated 93% of communication is wordless.

### *Anxiety and Uncertainty Management (AUM) Theory*

During initial communication, individuals unknown to each other experience uncertainty and anxiety (Infante et al., 2003). Uncertainty is the cognitive process that occurs when individuals are unable to predict the behaviors of others (Griffin, 2012). To observe and explain this phenomenon, Berger and Calabrese (1975) developed the uncertainty reduction theory (URT); its major tenet is during early stages of communication, interactants share the goal to reduce uncertainty (Neuliep, 2016). URT is especially suited to explain behaviors of others within a culture or group (Witte, 1993).

Anxiety is the emotional counterpart of uncertainty and the feeling of unease in unpredictable situations (Griffin, 2012). Gudykunst (1985) emphasized this affective dimension, looked between cultures, and extended URT to the anxiety/uncertainty management (AUM) theory. When interactants are newcomers to a group or culture, they are “strangers” (Neuliep, 2016, p. 1788). Because no two people share identical group memberships, the experience of being a stranger is common (Infante et al., 2003). Early-career college students often experience uncertainty/anxiety, and not just during initial interactions (McCroskey & Richmond, 2009).

Uncertainty reduction remains a goal in both URT and AUM theories as relationships develop (Hubbert et al., 1999; Witte, 1993). In URT, the singular goal is reduction (Witte, 1993). AUM theory adds to that goal and focuses on management of anxiety/uncertainty over time (Griffin, 2012). AUM theory helps explain behaviors between people and groups (Gudykunst, 1993), observes strategies used by welcoming groups to orient newcomers (Neuliep, 2016), and considers relationships as they develop. For institutions, AUM applies to initiatives in higher education related to orientation like first-year experience programs (Young, 2020). In students, AUM helps explain differences in their communication through characteristics of avoidance,

help-seeking behaviors, and willingness to communicate (Lund, 2020; Neuliep, 2016). In staff, “facilitated sensemaking” (p.719) reflects AUM as a supportive communication strategy that can reduce anxiety and uncertainty for students during their interactions with reference librarians (Lund, 2020).

Due to its complexity, AUM theory has garnered criticism; the full theory contains nearly 100 axioms related to interpersonal communication (Lund, 2020). Categories of axioms align with elements of Tinto’s (1993, 2017b) models of student success and motivation including self-concept (confidence), willingness to interact, and expectations. Other AUM axioms support instructional communication principles, discussed throughout this review.

### ***Rhetorical and Relational Traditions***

Communication messages tend to align with one of two traditions based on focus, goals, and context (Houser & Hosek, 2018). The rhetorical tradition focuses on messages delivered by sources, goals are to persuade and/or inform receivers, and a common context is traditional lectures (Houser & Hosek, 2018). The relational tradition’s focus is what messages mean to receivers and a main goal is source-receiver connection leading to communication relationships; a common context is small group discussions (Houser & Hosek, 2018). Rhetorical and relational traditions can function simultaneously, alternate, and/or complement one another (Farris et al., 2018). Regardless of the mix, the communication process remains: Meaning is stimulated in minds of others using verbal and nonverbal messages (McCroskey & Richmond, 1996).

**Rhetorical Process and Source Variables.** Rhetorical roots trace to Aristotle (ca. 333 B.C.E/1984) and his methods of persuasion (Farris et al., 2018). Sources apply Aristotle’s pathos when emotion is implemented to influence receivers and logos when logic and reasoning are used (Farris et al., 2018). Somewhat counterintuitively, Aristotle’s ethos is applied to sources



when receivers perceive them as credible (Farris et al., 2018). McCroskey et al. (2014) explain another way: source credibility exists in the mind of the receiver. It follows that in college classrooms, instructor credibility is not actual credibility (e.g. expertise, tenure, licensure) but rather credibility perceived by students (Lawrence, 2018).

Perceived credibility exerts measurable influence in higher education classrooms; students report increased learning (affective and cognitive) and situational motivation when instructors are perceived as credible (Myers & Knox, 2001; Myers & Martin, 2018; Schrodtt & Witt, 2006). Credibility also influences behavior. Students are more willing to seek out course-related materials, actively participate in class, and initiate talk (both in- and out-of-class) when perceived instructor credibility is high (Myers & Martin, 2018). Based on reviews of literature conducted in college classrooms, Myers and Martin (2018) recommend similar explorations outside the classroom. In this way, source credibility could inform on other interactions like student-staff, and student-peer (Myers & Martin, 2018).

Source credibility is a construct with three components: caring, character, and competence (Myers, 2010; Sellnow, 2017). Researchers contend caring is equivalent to Aristotle's (ca. 333 B.C.E/1984) goodwill (Lawrence, 2018). When goodwill/caring is favorably perceived, receivers sense connection and positive concern from sources (Myers & Martin, 2018). Students as receivers, then, are more likely to be influenced by sources perceived as caring (Farris et al., 2018).

Perceived caring may influence learning (Lawrence, 2018; Teven, 2007). In recent dissertation work, Lawrence (2018) explored how perceived caring impacts learning in online environments compared to perceived caring face-to-face. Lawrence's mixed method findings

show inconclusive results; students contrasted caring with responses ranging from “extremely different to not different at all” (p. 60).

Instructor caring is an aspect of credibility important to students (Teven, 2007) Caring includes empathy, understanding, and responsiveness (Myers & Martin, 2018). To examine instructor caring, Teven (2007) designed four empathic scenarios and randomly assigned students ( $n = 170$ ) to read and report perceptions. Teven found instructor caring associated with students' affect for course and instructor. In communication, affect means liking, interest, and attention (McCroskey et al., 2014). When affect is increased, students display more active listening, learning, and cooperation (Richmond et al., 2018). Student affect associates with performance and time on task (Lawrence, 2018) and aligns with success through involvement and active engagement (Astin, 1984; Kuh, 2008; Tinto, 1993).

**Relational Process and Source Variables.** Relational sources use verbal and nonverbal messages to establish ongoing connections with receivers, enacting AUM theory (Farris et al., 2018; Neuliep, 2016). Relational communicators emphasize shared characteristics with others and relationship-building strategies (Farris et al., 2018). Farris et al. (2018) explain, relational instructors tend to be learner-focused and concentrate not only on acquisition of knowledge (cognitive), but also skill development (behavioral) and feelings about learning (affective). Like instructors who align with constructivism, relational instructors tend to collaborate with learners, encourage learner-centered environments, consider students' perspectives, and focus on meanings made during classroom transactions (Farris et al., 2018). In higher education, learner-centered environments represent a shift from historical pedagogy that centers on content, the instructor, and/or teaching methods to deliver information (Farris et al., 2018; Woolfolk, 2016);

however, similarities remain. Relational and rhetorical communication share power imbalances that exist in most instructor-student relationships (Farris et al., 2018).

Rapport is an important variable within the relational tradition (Frisby & Buckner, 2018). As a construct, rapport has dimensions of “enjoyable interactions” (p. 127) and personal connections (Frisby & Buckner, 2018). A personal connection refers to a link between interactants that transcends traditional roles; an enjoyable interaction is communication perceived in a positive way (Frisby & Buckner, 2018). As an instructional strategy, rapport enhances positive states like confidence, and reduces negative states like anxiety (Frisby & Buckner, 2018). Rapport, then, aligns with AUM theory (Griffin, 2012). As a variable influencing student success, rapport associates directly with learning and situational (state) motivation (Frisby & Buckner, 2018).

Frisby et al. (2017) studied rapport in contexts requiring participation. Frisby et al. examined student-instructor rapport in undergraduate students at two colleges, one in the United States ( $n = 143$ ) and one in Turkey ( $n = 185$ ). Dependent variables (situational motivation for class, participation, and perception of learning) were regressed on student-instructor rapport and showed rapport as a significant predictor for all three outcomes (Frisby et al., 2017).

Sources (from either tradition) who enact variables can influence outcomes (Farris et al., 2018; Frisby et al., 2017; Lawrence, 2018). Considering Tinto’s (2017b) advisement, from a student’s point of view, rapport and caring may evoke similar responses and be indistinguishable by tradition (Myers et al., 2014). How sources are perceived remains important, but receivers also influence interactions in important ways (Myers, 2017).

### ***Receiver Characteristics and Influence***

In communication, roles of source and receiver are dynamic and interactants both receive and respond to communication messages (Houser & Hosek, 2018). When characteristics of response are displayed and measurable, research is informed about the characteristic (Griffin, 2012). Focusing on variables important to student success, this discussion proceeds with variables organized by human characteristics.

**Trait, State, and Trait-Like Variables.** Some human communication behaviors are reflections of a genetic trait and are largely considered immutable (Woolfolk, 2016). For example, argumentativeness is an observable and researchable trait, but varies very little (Beebe & Frei, 2018). Researchers interested in influencing communication behaviors are drawn to variables that fluctuate (Woolfolk, 2018). When human characteristics are observable, measurable, vary with stimulation/repression, and return to baseline, they are termed state variables (Frisby & Buckner, 2018). Many psychological/communication traits have a state counterpart (McCroskey & Richmond, 1996). For example, motivation has a base level (trait) but it also can vary and present as state motivation (Myers & Martin, 2018). State motivation is known to rise and/or fall in response to situations and experimental conditions like task completion and activity persistence (Hodis et al., 2010). When state motivation returns to baseline, trait motivation is displayed (Frisby & Buckner, 2018). State motivation is a student's willingness to expend effort toward a specific goal, course, topic, or assignment (Trad et al., 2014). Astin (1993) notes that student effort and time on task are critical to success. As a variable in the college classroom, state motivation captures students' incentive to learn as well as their internal response to instructor behavior (Trad et al., 2014). State motivation promotes feelings of affect, affiliation, and self-efficacy (Deci & Ryan, 1985; Trad et al., 2014). Tinto

(2017b) includes self-efficacy in his motivation model; he describes affiliation as a sense of belonging. Because both self-efficacy and sense of belonging influence motivation, they are key factors in student persistence (Tinto, 2017b).

***Trait-like Variables.*** Some communication variables fall within a state versus trait continuum. Trait-like characteristics present, instead, as biological predispositions (Trad et al., 2014). For instance, instructor humor is a behavior from the rhetorical tradition that is categorized as trait-like (Farris et al., 2018; McCroskey et al., 2014). Humor is also known as a strategy used by sources to enhance persuasive and/or informative messages (Myers & Martin, 2018). In other words, humor is intentional delivery of nonverbal and verbal messages enacted to elicit positive responses like laughter (Myers et al., 2014). Those that have trait-like humor tend to use and develop the strategy. In organizations or on campuses, use of humor to reduce anxiety aligns with AUM theory (Neuliep, 2016).

To explore the relationship between instructor humor and student learning, Wanzer et al. (2010) analyzed observer reports of 378 students from two universities. Wanzer found when instructor humor increases, students' positive affect, ability to process, and learning was enhanced. This supports literature that shows students appreciate and respond to humorous messages (Myers et al., 2014; Wanzer et al., 2010).

Trait-like tendencies are more static than state variables, but they can be enhanced or suppressed depending on the climate of the communication (McCroskey et al., 2014). To improve outcomes, scholars are interested in conditions that enhance or suppress trait-like qualities (Houser & Hosek, 2018). For instance, Witt et al. (2014) explored how positive instructor behaviors reduced students' receiver apprehension in classrooms. Receiver apprehension is a trait-like quality described as "the fear of misinterpreting, inadequately

processing, and/or being able to adjust psychologically to messages sent by others” (Wheeless, 1975, p. 263). Students who experience receiver apprehension report decreased learning (Beebe & Frei, 2018). Further, receiver apprehension leads to frustration, truncated recall, and reduced affect (Chesebro & McCroskey, 2001). Some scholars posit receiver apprehension contributes to attrition (Witt et al., 2014).

To show which factors may ease receiver apprehension, Witt et al. (2014) chose instructor credibility (rhetorical) as an independent variable and both receiver apprehension and intent to persist in college as outcomes. Witt et al. explain receiver apprehension associates negatively with intent to persist (the degree to which students believe their desire to remain in college is instructor-influenced). Using scales that measured instructors’ influence on state to persist, participants answered questions while considering one instructor (Witt et al., 2014). Undergraduates ( $n = 621$ ) enrolled in one of two courses among three universities, completed materials considering the instructor encountered directly before the class of study (Witt et al., 2014). Notable findings include perceptions of instructor credibility mitigated negative influences of receiver apprehension on intent to persist (Witt et al., 2014). Results support insights into the benefits of skillful communication; in this case the influence of a trait-like variable (receiver apprehension) was suppressed (Witt et al., 2014).

**Variables that Inhibit or Enhance.** Researched mostly in college classrooms in the rhetorical tradition, students’ orientations toward communication can be organized based on goals to receive, reduce, and/or increase communication (Beebe & Frei, 2018). For the goal of receiving, factors exist which can inhibit or enhance communication. When receiver apprehension (trait-like) is high, student communication is inhibited (Beebe & Frei, 2018). Other influential factors in receiving communication are learning preference, listening style, and

maturity level (Beebe & Frei, 2018). Orientations that inhibit classroom communication include shyness, communication apprehension, and public speaking anxiety (McCroskey & Richmond, 1996). Student tendencies that increase interactions are verbal aggressiveness and compulsive communication (Beebe & Frei, 2018; McCroskey & Richmond, 1996).

***Willingness to Communicate (WTC).*** Willingness to communicate (WTC) is an orientation that increases communication; those with high WTC are generally perceived as better students (Beebe & Frei, 2018). Considered a trait-like characteristic, WTC is unique to individuals and remains rather stable across contexts and cultures (Hodis et al., 2010; McCroskey & Richmond, 1987). As a human quality, WTC is defined as an “individual’s predisposition to initiate communication with others” (McCroskey, 1992, p. 16).

As a variable, WTC measures participants’ self-reported tendency to approach or avoid communication in a variety of settings (McCroskey, 1992). MacIntyre (1994) describes WTC as a readiness to talk with others that may predict communication behaviors. Brann and Sutton (2009) showed subtypes of WTC predicted behavior when combined with measures of attitude. For example, a subtype of WTC (WTC about smoking behavior) predicted communication behavior in 110 college students (Brann & Sutton, 2009). Researchers concluded students’ attitudes about communication and their WTC combined to influence the behavior of talking about smoking (Brann & Sutton, 2009).

Although considered a stable variable, WTC can be influenced by contexts/environments (Hodis et al., 2010; McCroskey, 1992, 1997; McCroskey & Richmond, 1987). In higher education, factors like instructor attitude, class size, and peer pressure can cause WTC to vary (Beebe & Frei, 2018; McCroskey, 1992). Trait-like receiver apprehension and level of class preparation also influence students’ in-class WTC (McCroskey & McCroskey, 2002).

Another example of WTC fluctuation is the second language (L2) space, where WTC has been widely studied (Pawlak et al., 2016). In mixed methods research, advanced L2 students in Poland showed high variability in WTC during live classroom conversation tables (Pawlak et al., 2016). Participants ( $n = 60$ ) were stopped every five minutes while in conversation to report their WTC (Pawlak et al., 2016). Researchers found students' WTC increased when interacting with known peers, about personal experiences, or in small groups and dyads (Pawlak et al., 2016).

Hodis et al. (2010) documented WTC variations in public speaking classrooms. Hodis et al. reported students' ( $n = 706$ ) WTC increased linearly during one semester. Hodis et al.'s methods included targeted instruction as an intervention and measured a subtype of WTC (public speaking WTC); however, researchers could not conclude results were solely based on the intervention (Hodis et al., 2010). Rather, researchers concluded the combination of state motivation to succeed and student-student engagement influenced positive changes in public speaking WTC (Hodis et al., 2010). Communication between group members that manages or reduces anxiety associated with a task is a tenet of AUM theory (Griffin, 2012).

While Hodis et al. (2010) associate motivation with increased WTC, Pawlak et al., (2016) hypothesize WTC is "very closely related" to motivation (p. 668). Other research maintains WTC and state motivation are separate constructs (Goldman et al., 2016; LaBelle et al., 2013; Munezane, 2016). Of note, WTC fluctuations were less distinct when subtypes or truncated measures were utilized (Pawlak et al., 2016).

Highlights of WTC over several decades shows researchers' emphases on its importance in higher education settings (McCroskey et al., 2014). Positive associations have been found between students' WTC and state motivation, positive affect toward a course, and instructor rapport (Demir et al., 2019; Myers et al., 2002). In social contexts, WTC correlates with self-



perceptions of composure, competence, leadership, and self-efficacy (Beebe & Frei, 2018; Richmond & Roach, 1992). Generally, high WTC is crucial in developing positive relationships with others (Hodis et al., 2010). Richmond and Roach (1992) describe WTC as “the one, overwhelming communication personality construct which permeates every facet of an individual’s life and contributes significantly to the social, educational, and organizational achievements of the individual” (p. 104).

### ***Immediacy and Influence***

Immediacy is an individual characteristic closely intertwined with nonverbal communication (McCroskey et al., 2014). In his seminal *Silent Messages*, Mehrabian (1971) described immediacy as directness and intensity between interactants. This description is echoed by Richmond and McCroskey (2009) who define immediacy as, “the degree of perceived physical or psychological closeness between people” (p. 43) in communication. Immediacy behaviors communicate approachability, precede meaningful communication (Mehrabian, 1971), and are positive and prosocial. (Witt et al., 2014). When immediacy is applied to classrooms and campuses, it contributes to positive and supportive climates (Hoy, 2020; Kuh et al., 2017). Kuh et al. (2017) aptly notes positive climate powerfully shrinks the psychological size of a campus. Communication strategies enacted to create positive climates align with AUM (Neuliep, 2016).

As a variable, immediacy is categorized as relational, has the power to influence and persuade, and is also considered a perception variable (Myers et al., 2014). Immediacy refers to the nonverbal aspects of perceived messages (McCroskey & Richmond, 2009). Some scholars consider verbal immediacy a separate construct (Anderson, 1979; Furlich, 2016; Hutchins, 2003). Other scholars disagree and posit verbal messages always carry a nonverbal component

and cannot be evaluated separately (Infante et al. 2003; McCroskey & Richmond, 1996). This review explores the variable nonverbal immediacy (NVI).

**Nonverbal Immediacy (NVI).** NVI is the degree of perceived psychological and physical closeness between interactants, resulting from behaviors associated with messages (Infante et al., 2003). NVI also includes perceptions of visual text and spoken words (Richmond & McCroskey, 2009). NVI is explored in many settings including medicine (Makoul et al., 2007), psychology (Patterson, 2019), distance education (Dixson et al., 2017), organizations (Myers & Knox, 2001), and adult education (Schutt et al., 2009). In higher education, NVI is most often examined as instructor behavior(s) perceived by students (Goodboy & Kashy, 2017).

***Instructor Nonverbal Immediacy (NVI).*** Instructor NVI is a well-studied variable with documented influence in the classroom (Trad et al., 2014; Weber et al., 2011). Myers et al. (2014) explored instructors' simultaneous use of rhetorical and relational behaviors and how they influence specific student outcomes (affective and cognitive learning, state motivation, and communication satisfaction). Communication satisfaction is students' self-reported satisfaction that represents concerns addressed and needs met within the course (Myers et al., 2014). To represent rhetorical instructor behaviors, Myers et al. chose humor, caring, and clarity as independent variables. Clarity is a strategy to enhance meanings in students' minds through verbal and nonverbal messages (Myers & Knox, 2001). To represent relational instructor behaviors, Myers et al. chose instructor NVI and confirmation. Confirmation is a relationship management strategy and occurs when instructors effectively communicate that students are worthwhile and significant (Goodboy & Myers, 2008). Examples of confirmation include respectful responses to questions and demonstration of authentic interest in students as individuals (Myers et al., 2014).

During data collection, participants were instructed to consider the instructor from the course immediately prior to the study session (Myers et al., 2014). In instructional communication, this method strategy maximizes the number and types of sources perceived (Goodboy & Kashy, 2017). For instance, Myers et al. (2014) students ( $n = 286$ ) reflected on previous instructors and captured impressions of 281 unique individuals across 39 disciplines. Myers et al. regressed dependent variables (affective learning, cognitive learning, state motivation, and communication satisfaction) on independent variables (humor, clarity, caring, instructor NVI, and confirmation). Results showed instructor NVI, clarity, and humor significantly influenced state motivation. Further, these instructional approaches convey interest in student success and create a positive environment (Myers et al., 2014; Socha & Beck, 2015).

Instructor NVI is associated with a plethora of outcomes in higher education. When students perceive instructor NVI as moderate to high, positive affect for instructor and course increases (Comadena et al., 2007). Allen, et al. (2006) showed instructor NVI as a motivational factor in student learning. Instructor NVI positively influences student satisfaction (Arbaugh, 2001; Hackman & Walker, 1990; Schutt et al., 2009). LaRose and Whitten (2000) reported when instructor NVI increases through support and compassion with technology, learning frustration decreases and affective learning increases. Houser and Frymier (2009) found when instructors are immediate, students feel empowered. Myers and Knox (2001) showed instructor NVI positively related to information-seeking behaviors. Witt et al. (2014) showed instructor NVI correlates positively with intent to persist in college.

**Immediacy Beyond Classrooms.** While NVI was developed in college classrooms, it is flexible beyond traditional contexts (McCroskey et al., 2014). For example, NVI has been applied to response times in electronic mail (email). Tatum et al. (2018) showed how professors'

time to reply to email evokes affect. Tatum et al. used simulated experimental vignettes and varied response times (virtual NVI) which showed students respond to NVI in asynchronous environments and prefer professor response times in a range of medium to fast for ideal learning.

In synchronous distance learning, immediacy is similar to mediated presence (Sellnow et al., 2015). Garrison et al. (2000) distinguish three types of mediated immediacy (presences): instructor, cognitive, and social. Garrison et al. explain, instructor presence results from students' interactions with instructors, cognitive presence from interactions with content, and social presence from interactions with peers. Combined, Garrison et al. elaborate: three variations are applied in tandem to non-traditional spaces to increase involvement. When students feel connected in these areas together, learning conditions are optimized (Garrison et al., 2000). As these areas intersect, they become enhanced and learning climates becomes prosocial, interactive, and supportive (Biocca et al., 2003; Garrison et al., 2000; LaRose & Whitten, 2000).

***Staff Nonverbal Immediacy (NVI).*** Staff NVI is not detected in communication research. Professional staff are described throughout literature as important to institutional goals (Felten et al., 2019), experiential learning (Kuh et al., 2017), student support (Roberts, 2018), informal campus communication (Felten & Schroeder, 2017), and social integration (Tinto, 2017a). Despite their stated importance, inquiries including staff are also largely absent in student success literature (Graham, 2010; Roberts, 2018). Historically, Bean (1980) included staff in visual representations of persistence but did not include their interactions as a variable. Scholarly affirmations coupled with Richmond et al.'s (2003) support to use NVI in any human setting and fortified by apparent research gaps, exploration of staff NVI is justified in future research.

To explore student interactions that lead to integration and success, this section focused on specific communication transactions, especially those in classrooms (Houser & Hosek, 2018).

Students' perceptions of others emerged as important, especially in student-instructor interactions (Myers et al., 2014). Examples show students' perceptions expand to environments outside the classroom (Garrison et al., 2000; Sellnow et al., 2015). During their journeys, students generate meanings and ideas from perceptions and experiences (Griffin, 2012; Houser & Hosek, 2018; Piaget, 1929). Accordingly, these perceptions are not limited to places or persons (McCroskey & Richmond, 1987).

### **Positive Communication, Education, and Practices**

Positive perceptions of people, places, and programs influence student success (Felten & Lambert, 2020). This section reviews how positive approaches in higher education may improve desirable outcomes. Positive psychological experiences during college are an important factor in student success (NASEM, 2021). Positive communication, education, and practices are all rooted in positive psychology (Seligman et al., 2009; Socha & Pitts, 2015).

Positive psychology identifies strengths in others and observes how individuals prosper and thrive, even in the face of adjustment (Froh, 2004). It looks for characteristics in groups that lead to flourishing, even in the face of crises (Seligman et al., 2009). Paradigm shifts from traditional psychology (disorders and maladies) to positive (well-being and thriving) are congruent with reframes from blame (deficit and attrition) to support in student success (Tinto, 2020). In 1998, the American Psychological Association (APA) initiated positive psychology as a movement and its influence has since infused other social sciences (Lomas et al., 2020).

Positive communication enacts the larger movement in psychology (Socha & Beck, 2015). Positive messages that improve well-being influence increased attention, better learning, and creative thinking, (Seligman, 2009; Socha & Pitts, 2015). Programs and interventions informed by positive communication are learner-centered, collaborative, and empowering

(Pascarella & Terenzini, 2005; Pitts & Socha, 2013). Positive education is learning for happiness, beyond skills and knowledge (Seligman et al. 2009). A “positive university” (p. 432) emerges when campus members intentionally influence experiences (Oades et al., 2011). When students, faculty, and staff engage, education becomes “relationship rich” (p.6), meaningful and enhanced (Felten & Lambert, 2020). Optimistic approaches have potential to influence success through learning, motivation, and engagement (Felten et al., 2016).

### ***Learning, Motivation, and Engagement***

**Learning.** While higher institutions differ in many ways, they share the crucial mission of learning (Mayhew et al., 2016). Students’ perceptions of experience activate affective domains of learning (Woolfolk, 2016) which in turn influence attitudes, beliefs, and values (Burke, 2019; Mazer & Graham, 2015). Success scholars consider processes of attitudes, beliefs, and values to exist within the mind as dynamic influences toward learning, involvement, and continuance (Astin, 1993). The NASEM (2018) confirm small interventions that activate affective domains can show significant and enduring outcomes.

For instance, Yeager and Walton (2011) scoured literature for prosocial communication interventions designed to change students’ thoughts and feelings (affective domain). One notable find was a series of experimental studies by Wilson and Linville (1982, 1985) that impacted student success. Yeager and Walton summarize Wilson’s and Linville’s methodology.

Struggling college students were randomized to two groups; the treatment group viewed interviews of upperclassmen who explained poor performance as temporary and encouraged participants to persist (Yaeger & Walton, 2011). The control group viewed the same peers who discussed topics unrelated to academics (Yaeger & Walton, 2011). Yaeger and Walton explain, official GPAs were collected from both groups after one year. Wilson and Linville found, as

explained by Yaeger and Walton, students in the treatment group earned higher GPAs, improved their academic performance over time, and were 80% less likely to drop out of college. This is an example of intentional student-student messaging that managed uncertainty, communicated caring, and influenced success (Hawken et al., 1991; Neuhauser & Weber, 2011; Neuliep, 2016; Yaeger & Walton, 2011).

Wilson and Linville's (1982, 1985) methods have been replicated many times and may seem "magical" (Yaeger & Walton, 2011, p. 268). Instead, Yaeger and Walton (2011) explain, the interventions and successful replications were efficacious because they were designed based on theory and modified specifically to context. Further, Yaeger and Walton emphasize, the designs were subtle but effective within complex contexts. The NASEM (2018) validates nonacademic interventions not only for increased learning but also motivation.

**Motivation.** Motivation is intertwined with learning, communication, and student success. Communication scholars observe motivation as a trait and state variable (Houser & Hosek, 2018). Tinto (2017a) echoes fluctuation when he describes motivation as malleable in emerging adults. The NASEM (2018) describes motivation as an evolving phenomenon, enhanced by student interest and influenced by social and cultural forces over time. Further, motivation predicts engagement (NASEM, 2018).

**Engagement.** Engagement is a factor in models of learning, student success, and positive communication (Kuh et al., 2006; Socha & Beck, 2015). Astin (1993) emphasizes social engagement leads to progressive change in attitudes, beliefs, and values (affective domain) within young adults. Engagement is complex and difficult to define and/or measure (Tinto, 2020). To clarify engagement qualitatively, Wolf-Wendel et al. (2009) reviewed empirical literature. In a clever second step, Wolf-Wendel et al. interviewed higher education scholars who

coined the terms integration, involvement, and engagement in student success. Archival data provided descriptions of engagement from a detached perspective as a(n): institutional mission factor, resource allocation measure to encourage participation, administrative goal, quantified student energy toward learning, and learning outcome (Wolf-Wendel et al., 2009). The interviewees critiqued descriptions that failed to capture the experience of engagement; contributed engagement, integration, and involvement describe the same phenomenon, but did not define it (Wolf-Wendel et al., 2009).

Astin (1993) and Tinto (2017b) clearly distinguish engagement from participation, advise against measures that equate them, but note institutions often utilize participation data to justify engagement. Instead, institutions should consider students' perspectives when conceptualizing engagement. Educational psychologists define engagement as "students' intentional, proactive, and constructive contribution" (p. 161) to learning and activities (Reeve, 2012). This definition aligns with Astin and Tinto's requirements.

***First-Year Seminars.*** First-year seminars (FYS) are one of AAC&U's high impact practices (HIP), widely implemented to enhance engagement and increase retention (Paige et al., 2017). Also known as first-year experiences or freshmen seminars, FYS were first established in 2007 (Kuh et al., 2017). While approximately 96% of four-year institutions offer FYS (Schmidt & Graziano, 2016), there is little empirical evidence linking FYS to retention (Kuh et al., 2017). In fact, some research shows opposite results.

From a purposive sample of 101 large research universities, Johnson and Stage (2018) analyzed participation in FYS on a scale where "0 = not offered" and 3 = "required for all" (p. 763), found FYS negatively related to four and six-year graduation rates, and concluded higher education may be misinformed about the benefits of HIPs (Johnson & Stage, 2018). Johnson and



Stage measured university-level participation of one type of university (large). To inform decisions, Kuh et al. (2017) recommends student-level data to inform decisions; Young (2020) advises analyses at both levels; and Kaplan et al. (2020) emphasizes the importance of contextual influences within all types of social science inquiries.

Some FYS programs show impressive results, especially those responsive to contexts and students (Felten et al., 2016; Young, 2020). Still, wide conclusions are clouded, Schmidt and Graziano (2016) explain, by program variations (type and implementation). For instance, some FYS programs continue for a semester and include college credit; others are shorter and do not award credit (Kuh, 2008; Schmidt & Graziano, 2016). Some FYS continue in a subsequent year for sophomores; others continue each year and culminate in capstone projects (Schmidt & Graziano, 2016). Benefits like lifelong learning can emerge much later (Padgett et al., 2013).

***Learning Communities.*** FYS are often linked to another course, forming a learning community (Kuh, 2008). Learning communities create student cohorts with course schedule commonality, are designed to encourage peer connections, and increase sense of belonging (Felten et al., 2016; Kuh, 2008). Not as ubiquitous as FYS, learning communities exist in approximately 50% of four-year colleges (Kuh, 2008). Learning communities are known to enhance engagement and associate with both short- and long-term benefits (Kuh, 2009).

### ***Student Development and Supportive Others***

**Student Development.** Research within student success, communication, and education inform student development (Manyanga et al, 2017). Arnett (2000) extended Piaget's (1929) seminal work in children and developed his theory of emerging adulthood, a distinct stage during approximate age range of 18 to 25. Researched changes within students include intellectual growth, moral development, and social adjustment (Arnett & Tanner, 2006). Development

influences learning, motivation, and engagement (Mystkowska-Wiertelak, 2020). Inquiries in communication investigate young adults' developmental maturity and, when combined with communication preferences and tendencies, informs decisions of student support more fully (Beebe & Frei, 2018). Synthesizing research over decades, Pascarella and Terenzini (2005) conclude educators must deeply understand growth and change processes in young adults to influence learning and engagement. Leaders agree students' holistic development should be carefully considered when designing and implementing support (NASEM, 2018).

**Supportive Others.** Supportive others include professional staff who contribute to student development (Deil-Amen, 2011). Typically non-faculty and charged with assisting students, staff support student success through a multitude of roles including administrators (Pitman, 2000), learning center professionals (Carr & London, 2019), counselors (Fruht, 2015), disability services professionals (Capstick et al., 2019), librarians (Deeken et al., 2019), and campus life professionals (Schreiber et al., 2014). Professional staff comprise about 50% of non-academic employees in higher education (Gander et al., 2019). Literature is replete with examples of staff support and/or facilitation of student engagement as shown in Table 1.

When asked to identify supportive others, students may choose individuals from their personal life. For instance, Fruht (2015) conducted survey research with 181 students from four institutions (public universities and community colleges). Results indicated students rely on non-faculty members for guidance and relationships with them differ from formal connections to faculty, advisors, and mentors (Fruht, 2015). Fruht (2015) noted non-faculty staff scored high in “supports my goal setting” and “supports my career exploration” (p. 74). Because Fruht asked participants to nominate two supportive others from their lives, many students chose individuals

not associated with college, like family members or clergy, limiting results; researchers are reminded to consider participants' perspectives in research designs (Creswell, 2012).

**Table 1**

**Staff Support and/or Facilitate Student Engagement**

Area of Support	Reference
Academic progress	Capstick et al., 2019; Douglas & Attewell, 2014
Access to academic resources	Ake-Little et al., 2020
Accountability	Kilgo et al., 2015
Adjustment to college	Astin, 1999; Paige et al., 2017
Autonomy	Capstick et al., 2019; Dixon et al., 2017
Behavioral change	Capstick et al., 2019
Campus liaison	Bettinger & Baker, 2014; Capstick et al., 2019
Campus navigation	Deiorio et al., 2016; Mottet et al., 2006
Career counseling	Zepke & Leach, 2010
Commitment to continuance/completion	Carr & London, 2019; Frambach et al., 2014
Complements other resources	Burke, 2019
Connectedness	Eblen-Zayhas & Russell, 2019
Developmental	Douglas & Attewell, 2014
Disability	Capstick et al., 2019
Emotional	Deil-Amen, 2011
Encouragement	Bovill et al., 2015; Garrison et al., 2000
Enhance comfort/competence	Deil-Amen, 2011
Experiential learning	Kuh et al., 2017
Goal Setting	Bowman, 2020; Strom & Savage, 2014
Human connection	Fruiht, 2015; Wilson & Gettings, 2012
Individual attention	Ake-Little et al. 2020
Informal interactions	Felten & Schroeder, 2017
Instruction	Curtis, 2017
Interactions (academic and social)	Tinto, 2017a; Wolf-Wendel et al., 2009
Navigation of institutional bureaucracy	Ake-Little et al. 2020
Non-cognitive skills	DeHart, 2013
Overall support	Roberts, 2018
Perceived value of curriculum/learning	Deiorio et al., 2016; Padgett et al., 2013
Reduce cognitive barriers	Burke, 2019
Relatedness	Frambach et al., 2014; Hanley-Dafoe & Bruce, 2018
Sense of belonging	Grace-Odeleye & Santiago, 2019
Serve as agents	Deil-Amen, 2011
Technology	Biocca et al., 2003; LaRose & Whitten, 2000
Time on task	Astin, 1993

*Note.* Neither list of support nor references is exhaustive.

***Academic Coaching.*** Academic coaching is a program of support and personal development (Pascarella & Terenzini, 2005; Pechac & Slantcheva-Durst, 2019). Coaches assist students in campus navigation, non-cognitive skills, and/or overall adjustment to college (Neuhauser & Weber, 2011; Pechac & Slantcheva-Durst, 2019). Academic coaching is student-centered, longitudinal, and complements other programs like advising, tutoring, and counseling (Deiorio et al., 2016; Mottet et al., 2006; Socha & Pitts, 2012).

While academic coaching has existed since 2000 and is widely used, its literature is not robust (Capstick et al., 2019; Pechac & Slantcheva-Durst, 2019). In other fields, coaching is rich with literature: business, behavioral and economic sciences, adult and secondary education, philosophy, and psychology (DeHart, 2013). Capstick et al. (2019) explains empirical data is limited because no uniform framework exists for its practice.

One variation of academic coaching includes in-person meetings in student-staff dyads (Neuhauser & Weber, 2011; Pechac & Slantcheva-Durst, 2019). Some programs use third parties that contact students via phone, electronic mail, and/or social media (Bettinger & Baker, 2014). In a randomized experiment of 13,555 students (average age was 31) from eight institutions, Bettinger and Baker (2014) analyzed vendor data over two semesters, operationalized meetings as interactions lasting over five minutes, and note 94% the treatment group met with a coach one or more times. Bettinger and Baker's results showed coached students more likely to persist during the semester of treatment (63% versus 58%) and 4% more likely to persist two years later.

Academic coaching can be targeted toward populations like students on academic probation (Douglas & Atwell, 2018). With graduate students as coaches at a state-funded university, Capstick et al. (2019) studied data over five semesters from students encouraged to

attend coaching due to their academic standing. Success was equated with GPAs of 2.0 after one coached semester (Capstick et al., 2019). Capstick et al. showed success rates of 38.6% for full-time students coached bi-weekly; success rates were 17.1% for similar non-participants.

Pechac & Slantcheva-Durst (2019) collected 8,685 interactions from 15 community colleges in one state. In one semester, Pechac & Slantcheva-Durst's results showed academic coaching was among 17 variables that explained 31.5 % of variance in student success, measured by credit-hour completion ratio. Further, Pechac & Slantcheva-Durst report higher ratios for students coached three or more times; those in one-on-one sessions completed more credits than those coached in groups.

### ***Settings, Context, and Climate***

Settings, context, and climates are intertwined with impressions and immediacy (Hawken et al., 1991). Meaning is made in the minds of others when these factors are perceived (Griffin, 2012). Students' perceptions of settings, contexts, and climate influence their decisions, behavior, and subsequently, engagement (Felten et al., 2016). Even structural settings (size and type of institution) are factors in success models (Mayhew et al., 2016). Broad settings described more specifically are contexts.

Contexts are unique, dynamic, and influential (Kaplan et al, 2020). Contextual differences are innumerable but include time, location, class size, and institutions' emphases on teaching, learning, and research (Schmidt & Graziano, 2016). As students respond to contexts, their effort can vary (individual differences), influencing success through their level of involvement (Astin, 1984). Kinzie and Kuh (2017) add that intra-campus environments vary (contextual differences) and influence outcomes. Considering the complexity and unpredictability of educational contexts, Kaplan et al. (2020) reviewed and critiqued ten random-

controlled trials (RCT) from their own project conducted over four years at three institutions with 3,092 participants. Through control of contextual and confounding variables, methods of RCTs are widely thought to be replicable and results generalizable to other settings (Creswell, 2012). Kaplan et al. examined outcome variance in their replication experiments and found context influenced results through “the way [their intervention] was received” (p. 286). Further, evidence showed context exerted influence in the same setting at different times. Kaplan et al. argues contextual factors be re-examined as an impactful and dynamic influence throughout social sciences. Other scholars offer similar advisement: Empowered strategies to impact success can and should emerge from each institution’s context (Hoy et al., 2020; Oades et al., 2011).

Climate, related to setting and context, is even more abstract. Kuh et al. (2017) note positive climates can powerfully shrink the psychological size of a campus. Kaplan et al. (2020) found motivational climate varied by course. Hoy (2020) agrees it is difficult to describe, but campus climate is a force worthy of exploration in student success. This discussion about setting, context, and climate implies immediacy may be communicated not just person-to-person but perhaps widely across environments. Place immediacy is not robustly represented in literature (Savage et al., 2019).

**Immediacy Within Settings, Contexts, and Climate.** Perceptions of place can communicate closeness (Hoy, 2020). When visiting and comparing colleges and universities, individuals perceive “striking differences in the feel” (p. 9) of some over others and responses vary widely among individuals (Hoy, 2020). Researchers are drawn to explore the phenomena of settings, contexts, and climates that communicate immediacy.

Furlich (2016) explored setting. Furlich noted most immediacy research occurred at large universities, leaving a gap for those enrolled in colleges of different size and type. Furlich also

considered context through class size (generally there are more students per classroom at large schools). At a small independent liberal arts university with small class sizes, Furlich predicted student motivation and instructor immediacy would correlate. Instead, Furlich's analyses of 77 undergraduates showed no significant relationship. Because results contrasted with volumes of similar research conducted in large universities, Furlich recommends more research in higher education settings that differ from large universities.

Scholars interested in contextual immediacy observe classrooms, web environments, and informal groups outside of class (Hawken et al., 1991). In a qualitative report, Hartup and Cossentino (2019) describe immediacy-enhanced learning which occurred in an airport setting. Debriefing discussions were adapted to a public place (during travel back from an honors conference), meaningful parts of the conference were reviewed, and next steps were planned (Hartup & Cossentino, 2019). Group immediacy and shared experience enabled a positive learning experience to occur off-site (Hartup & Cossentino, 2019).

Savage et al. (2019) considered Tinto's (1993) interactionist model, conceptualized communication between students and institutions as interpersonal relationships, and confirmed a void in perception literature for student-institution interactions. Students' commitment to their institutions and the inverse, institution-student commitment are important to success (Tinto, 2012). At one large university, Savage et al. applied an investment model, adapted interpersonal scales, and studied 251 undergraduates. Savage et al. predicted persistent students would perceive their university as more committed to them than non-persistent students would; this hypothesis was not supported. To further inform persistence literature, Savage et al. encouraged more relational research, especially the student-institution dynamic perceived by students.

## Conclusion

This literature review unfolded in three distinct portions and emphasized how multiple disciplines intersect and inform student success. Each portion showed areas of expertise that contribute to the body of knowledge toward the topic of student success. Each portion also revealed areas which could benefit from further inquiry.

The first portion was guided by Tinto's (1993) interactionist model and explored student success as a complex phenomenon and an individual process which occurs incrementally between admission and completion (Tinto, 2017b). Literature emphasized engagement, synonymous with involvement and integration (Astin, 1984; Kuh, 2009; Pascarella & Terenzini, 2005; Tinto, 2017a). Engagement is influenced by a complex set of interactions between students and others, including peers, faculty, and staff (Bean, 1980, Kuh et al., 2005; Spady, 1970; Tinto, 2017b). To measure success, scholars were advised to choose student variables of accomplishment (Kinzie & Kuh, 2017; Tinto, 2017b). Akos (2020) noted students' course withdrawals are omitted from most measures.

In the second portion, communication literature informed students' interactions. Gudykunst's (1993) anxiety/uncertainty management (AUM) theory was introduced which undergirds instructional/interpersonal communication, positive communication, and student support. Students' perceptions are important to decisions, behaviors, and success (Farris et al., 2018; Frisby et al., 2017; Lawrence, 2018; Myers et al., 2014). Experts on interactions within classrooms, scholars call for exploration of student interactions outside the classroom (Myers & Martin, 2018; Sellnow et al., 2015). Immediacy was emphasized as influential to students'



experiences in college, yet some applications of nonverbal immediacy (NVI) have not been explored, like NVI of advisors, tutors, and staff (Myers & Martin, 2018).

In the final section of this review, positive communication and practices were examined. Interrelationships between learning, motivation, and engagement were discussed and distinctions between engagement and participation were clarified (Astin, 1993; Tinto, 2017b). Related to programs, contexts, and supportive others, several literature gaps surfaced. First year seminars, (Johnson & Stage, 2018; Kuh et al., 2017; Young, 2020) and academic coaching require research (Capstick et al., 2019; Pechac & Slantcheva-Durst, 2019). Savage et al. (2019) note a void in perception research, especially within the student-institution relationship. Furlich (2016) notes a setting void as most immediacy research was conducted at large universities.

Overall, literature from several disciplines and settings directs scholars to consider a wide variety of factors that impact student success. Further study in the arena of student success is justified and recommended. The next chapter provides the methods of this study.

### **CHAPTER III**

### **METHODOLOGY**

The problem of this study was to examine settings beyond large research universities and determine how interactions with professional staff relate to early-career student success. The purpose of this quantitative study was to explore small residential campuses and determine how students' early-career success, measured by GPA, was affected by willingness to communicate, perceptions of staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching. The previous chapter analyzed extant literature within student success, communication in higher education, and positive communication/education/practices and identified gaps that led to the present study. This chapter provides methods and procedures implemented to address the research problem and purpose. The discussion begins with study design, participants, context, and variables. The discussion continues with instrumentation including each instrument's development, reliability, and modification for this study. Discussion concludes with validity expectations, procedural strategies, and data analysis plan.

#### **Research Questions**

Method choices in this study considered these research questions (RQ):

RQ<sub>1</sub>: How does willingness to communicate affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>2</sub>: How does staff nonverbal immediacy affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>3</sub>: How does credit hour completion ratio affect early-career grade point average of students enrolled in small residential colleges?

RQ4: How does participation in academic coaching affect early-career grade point average of students enrolled in small residential colleges?

RQ5: To what extent do willingness to communicate, staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching (alone or in combination) affect early-career grade point average of students enrolled in small residential colleges?

### **Research Design**

This quantitative study was non-experimental, cross sectional, correlational, and explanatory. Correlation design and analyses allowed investigation of relationships between variables. This study also explored how independent variables work together to affect the outcome variable. Multiple regression analyses helped explain each independent variable's contribution to student success as measured by GPA.

### **Population and Setting**

The target population is full-time, traditional, and early-career U.S. students enrolled in small residential four-year colleges that provide campus support programs like first-year seminars, learning communities, and/or academic coaching. In Fall 2020, 19.7 million U.S. students were projected to attend colleges and universities and 12.0 million were expected to attend full time (NCES, n.d.). NCES (n.d.) projected 71.1% to attend four-year institutions 25.9% to attend private institutions. Demographic projections for the national cohort (Fall 2020) were 57.3% female and 52.2% white (NCES, n.d.). The host college is a small residential four-year college located in the Midwest region of the United States (Carnegie, n.d.; NCES, 2020). During the 2019-2020 academic year, undergraduate student enrollment was 1,114 and 93% were full-time students (NCES, 2020). Demographically, the host college's full cohort was 55%

male and 77% white (NCES, 2020). The host college identifies as a private and small residential liberal arts college (Marietta College, n.d.).

### **Sample and Context**

The sample in this study was full-time, traditional, and early-career U.S. students enrolled in a small residential liberal arts college (four-year) who were 18 or older. Freshman participants were enrolled in a first-year seminar (FYS) course and sophomores in a follow-up seminar (FUS). Combined, these programs registered over 450 students in Fall 2020 (N. Livengood, personal communication, August 14, 2020). This theoretical sample exceeded the rule of thumb for minimum-participant requirements in statistical analyses: 100 for correlation and 200 for regression analyses (Keith, 2015).

Students were recruited in the context of support, specifically FYS and FUS classrooms. In Fall 2020, first-time college students met weekly in a required one-credit FYS course and formed a cohort of approximately 300 students in 22 sections of 18 or less (N. Livengood, personal communication, August 14, 2020). Livengood explained topics included adjustment to college, personal development, and strategic learning; goals included introduction of campus departments and supportive resources like financial aid and career counseling; and in most cases, professional staff facilitated the non-academic content. At the host college, FYS was linked with a two-credit academic class taught by faculty (W. Zerbe, personal communication, August 28, 2020). Course schedule commonality created a learning community as described by Kuh (2008). Transfer students participated in a separate section and were not recruited for this study (N. Livengood, personal communication, August 14, 2020).

A three-credit course (FUS) was a requirement for students in their second academic year at the host college, designed as an extension of FYS, and offered both semesters (A. Perry,

personal communication, September 14, 2020). In this study, sophomores were recruited from FUS classrooms. In Fall 2020, 141 students were enrolled in one of nine sections with 17 students or less (A. Perry, personal conversation, September 14, 2020). Perry explained FUS students typically experienced FYS and learning communities in Fall 2019; at the study college, these sophomores were the first cohort to participate in FUS.

FYS/FUS classrooms were chosen to explore perspectives of students who had experienced campus support; FYS programs are an AAC&U (2020) high impact practice. Kuh (2008) notes statistics are not collected nationally for FYS but based on reports to the National Resource Center for The First-Year Experience and Students in Transition, Schmidt and Graziano (2017) estimate FYS operates on 96% of campuses in various forms. Further, the FUS/FYS context was chosen because these programs encourage student interactions throughout campus (N. Livengood, personal communication, August 14, 2020) which aligns with the focus of this study. Finally, this purposive sampling was a strategy to maximize response rates.

### **Research Variables**

GPA was the outcome variable (objective), retrieved from reports of record. Students' willingness to communicate (WTC) and perceptions of staff nonverbal immediacy (NVI) were subjective independent variables; they were reported by participants. Credit hour completion ratio (CCR) and participation in academic coaching were objective independent variables.

#### ***College Grade Point Average (GPA)***

GPA was the dependent variable in this study. Within student success models, GPA is influenced by academic and social experiences (Mayhew et al., 2016; Tinto, 2012). Scholars and administrators consider GPA an indicator for persistence and completion (Mayhew et al., 2016). GPA is a student measure that reflects a level of accomplishment as recommended by Kinzie and

Kuh (2017). GPA was evaluated as a continuous variable at the scale level. Possible values ranged from 0.0 to 4.0. Research values ranged from .001 to 4.000.

### ***Willingness to Communicate (WTC)***

WTC was a subjective independent variable for this study and is a human characteristic considered relatively stable across contexts (McCroskey & Richmond, 1987). WTC was defined as an “individual’s predisposition to initiate communication with others” (McCroskey, 1992, p. 16). WTC is a behavioral characteristic crucial to positive relationships (McCroskey & Richmond, 1996; Richmond & Roach, 1992). For this study, WTC was applied to Tinto’s (1993) interactionist model and represented a student characteristic that may influence success through interactions (Houser & Hosek, 2018; Kuh et al., 2017). Applied to anxiety/uncertainty management (AUM) theory, WTC aligns with information-seeking behaviors (Neuliep, 2016). WTC was evaluated as a continuous variable at the scale level. Possible values range from 0 to 100. Research values ranged from 17.5 to 100.0.

### ***Staff Nonverbal Immediacy (NVI)***

Staff NVI was a subjective independent variable in this study. This study measured staff NVI perceived by students. Students chose a staff person (unidentified), reflected on previous communication interactions, and reported NVI behaviors observed and/or recalled. Staff NVI represented an institutional characteristic in Tinto’s (1993) interactionist model and served as both a perception and relational variable within communication transactions (Houser & Hosek, 2018). As staff (welcomers) interact with students (newcomers), interactions are considered responsive communication strategies within AUM theory (Neuliep, 2016). Staff NVI was evaluated as a continuous variable at the scale level. Possible values range from 26 to 130. Research values ranged from 60 to 124.

### ***Credit Hour Completion Ratio (CCR)***

CCR was an objective independent variable in this study. CCR was calculated with credits earned and/or attempted at the host college. Total credit hours completed were divided by hours attempted. Credits withdrawn (W) or graded as failed (F) or unsatisfactory (U) counted as attempted but not completed. Kwenda (2014) conceptualized CCR as a measure of academic achievement and progression. Ratios above .80 are generally considered to represent success (Akos, 2020; Ruffalo Noel Levitz, 2015). Ratios above .67 represent satisfactory academic progress (Kwenda, 2014; U.S. DOE, 2020). In this study, CCR was applied to Tinto's (1993) interactionist model to represent academic progress and evaluated continuously at the scale level. For all students, total attempted hours ranged from 12 to 81 and completed hours ranged from 3 to 81. Research values for CCR ranged from 0.05 to 1.00.

### ***Academic Coaching***

Academic coaching was an objective independent variable in this study and a support service provided to students. Participation was operationalized as number of sessions attended. Academic coaching is posited to produce long-term benefits (Padgett et al., 2013). At the host college, coaching was a private conversation between a student and staff, occurred face-to-face (in-person or through Zoom<sup>®</sup>), typically lasted 15-30 minutes, and was available to all students (A. Cech, personal communication, October 10, 2018). Cech (2018) explained students not in good academic standing were required to attend weekly. Those in good academic standing but near the cut-off were strongly encouraged to participate (Cech, 2018). Cech states others were encouraged to attend by staff, faculty, and/or mentors. Cech estimated 50% of coached students attend without requirement. In Fall 2020, 297 unique students participated in services provided

by the academic resource center and 179 met with one of six academic coaches (M. Gandor, personal communication, December 2, 2020).

Applied to Tinto's (1993) interactionist model, participation in academic coaching represents interactions which may lead to success. Academic coaching aligns with the transactional model of communication (Houser & Hosek, 2018), constructivism (Griffin, 2012), and AUM theory (Neuliep, 2016). Specifically, it aligns with axiom 23 of AUM which describes situational processes (Neuliep, 2016). Academic coaching was a strategy of support provided to decrease anxiety/uncertainty in students as they navigated college as a new environment and/or academic struggles as an uncertain situation (Neuliep, 2016). Freshmen sessions were counted after one semester and sophomores' totals included three. Participation was evaluated as a continuous variable at the scale level. Research values ranged from 0 to 15.

### ***Control Variables and Demographics***

In addition to study variables, 13 control variables were collected. Guided by Creswell (2012), choices were based on extant literature but not directly related to research questions. Control sources were subjective (reported by students) and objective (official records). Guided by Tinto (1993), variables were categorized by source and occurrence (pre-college or within-college) as shown in Table 2.

**Pre-college Control Variables.** Pre-college controls included demographics and prior academic achievement. Demographics reported by students were gender, generational status, and race. Objective variables were home residence and high school GPA. High school GPA was evaluated continuously and represented prior academic achievement (Mayhew et al., 2016). For two participants, high school GPA was not available. For these scores, class-group mean was the



proxy for high school GPA, a validation method explained by Field (2015). Research values for high school GPA ranged from 1.91 to 4.00.

**Table 2**

**Study and Control Variables by Source and Occurrence**

	Source		Occurrence		coding scheme
	objective	subjective	pre-college	within-college	
<i>Study</i>					
GPA (dv)	●			●	
WTC		●		●	
Staff NVI		●		●	
CCR	●			●	
Academic Coaching	●			●	
<i>Control</i>					
Age		●		●	
Campus employment		●		●	0/1
College residence		●		●	
Declared major	●			●	0/1
FYS grade	●			●	
Gender		●	●		du
Generation status		●	●		0/1
High school GPA	●		●		
Home residence	●		●		0/1
Persistence	●			●	0/1
Race		●	●		du
Student organizations		●		●	0/1
Varsity athletics		●		●	0/1

*Note.* dv = dependent variable; du = dummy coded; 0/1 = binary coded.

***Coding of Pre-college Control Variables.*** Categorical pre-college variables were coded dichotomously (0, 1). For generation and home residence, first generation and in-state were coded with a value of 0. Because more than two categories were reported for gender, the category was dummy coded with male as the reference group. Race was similarly coded with white as the reference group. Reference group membership was assigned the value of 0.

**Within-college Control Variables.** Within-college variables included age, campus employment, college residence, declared major, FYS grade, persistence, student organizations, and varsity athletics. Students reported their age by month and year. College residence, student organizations, varsity athletics, and work-study were also subjective and represent student engagement. Objective variables were declared major, persistence, and FYS grade. FYS grade was an objective course grade in a one-credit, non-academic course (N. Livengood, personal communication, August 14, 2020). This measure was evaluated as a continuous variable and represented student engagement as explained by Kuh (2008). For six sophomore transfer students, FUS grade served as a proxy for their FYS grade. FYS grade was the only continuous variable among five engagement controls and values ranged from 0.00 to 4.00.

***Coding of Within-college Control Variables.*** Categorical within-college variables were coded dichotomously (0,1). On-campus residence, work-study, declared a major, and persisted to Spring 2021 were assigned a value of 1. For student organizations, responses that indicated membership in one or more student groups were coded as 1. The category of student organizations did not include varsity sports. For sports, responses that identified membership in varsity sports were assigned a value of 1.

## **Instrumentation**

Two instruments were utilized in this study and are below including history and development, characteristics, reliability estimates, and validity. Slight modifications are explained and defended. This section clarifies appropriate use of each instrument to measure subjective independent variables in this study.

### ***Willingness to Communicate Scale***

Willingness to communicate (WTC) is a trait-like predisposition to initiate communication (McCroskey & Richmond, 1996). In this study, McCroskey and Richmond's (1987) WTC scale measures participants' WTC as a tendency to approach/avoid communication situations. In this way, WTC may influence communication behaviors which contribute to student success (McCroskey, 1992; McCroskey & Richmond, 1987, 1996).

**Development of the WTC Scale.** Since the 1940s, literature has noted individuals' tendencies to approach /avoid talk (McCroskey & Baer, 1985). McCroskey and Baer (1985) observed scales which measured unwillingness to communicate, described its conceptual opposite, termed it "willingness to communicate" (p. 3) and developed the WTC scale. As with unwillingness instruments, the WTC scale shows stability across varied contexts.

**Characteristics of the WTC Scale.** The WTC scale assumes participants can report their tendencies to approach/avoid communication in different situations and self-awareness was validated in college students, younger children, and second language (L2) individuals across a wide age range (McCroskey, 1992). The WTC scale is a 20-item probability-estimate instrument; participants are asked to indicate percentage of time (0 to 100) they would choose to communicate in 20 situations (McCroskey, 1992). Each closed-ended item provides 101 possible fill-in-the blank responses, providing high variability (DeVellis, 2017).

**Reliability and Validity of the WTC Scale.** In early WTC studies, measured in college students from six countries including the United States, reliabilities ranged from .86 to .95 (McCroskey, 1992). This aligns with high reliability ( $r > .85$ ) in social science research (Creswell, 2012). Recent studies confirm reliabilities above .85 (Pawlak et al., 2016; Prihartanti & Prihartanti, 2017; Reinders, & Wattana, 2014).

**Modifications of the WTC Scale.** The WTC scale has eight distractors (McCroskey, 1992). No rationale for their inclusion was found, but without them the cadence reads: friend, acquaintance, stranger in a way that could be monotonous for participants. While unscored, items present dated pedagogical language (Arendale, 2020), for example, “talk with a service station attendant” and “talk with a secretary” (Appendix A). Creswell (2012) encourages researchers to “locate or modify an existing instrument,” (p. 168). Current researchers used original WTC (Prihartanti & Prihartanti, 2017), shortened (Pawlak et al., 2016), and modified (Harris, 2017).

**Field Tests and Field Notes.** To balance history and reliability with cultural issues, distractors were modified (Arendale, 2020; McCroskey et al., 2014). For example, “talk with a spouse (or girl/boyfriend)” (Appendix A) was changed to “talk with a significant other”. Field-tests of modified scales (Appendix B) were conducted with 14 student volunteers who completed the scale quickly without puzzlement. Space was provided for student IDs but not names. Nine questionnaires returned had neither name nor student ID. One student commented, “no one knows their student ID”. A name space was added, and WTC was re-tested with 20 student volunteers. Completed instruments were submitted with a name (Appendix B).

**Exploratory Subscale and Final WTC Version.** Distractors were re-modified for this study (Appendix C) with staff WTC as an exploratory subscale; because this applied to unscored items only, the scale’s integrity, administration, and scoring was maintained (McCroskey, 2007). Modification is supported by literature with created WTC subtypes (Hodis et al., 2010; Pawlak et al., 2016). WTC staff subscale was designed to explore how the presence of campus adults influences approach/avoidance tendencies. Based on McCroskey’s (2007) context-types (dyad, meeting, group, and public), two distractor items for each type were created for staff WTC. Original WTC items and created distractors (unscored) are listed by type in Appendix D. No

special permissions were required; an image that captures and restates the generous sharing policy appears in Appendix E.

### ***Nonverbal Immediacy Scale for Observers (NIS-O)***

Nonverbal immediacy (NVI) is “the use of nonverbal behavior to increase immediacy between interactants” (Richmond & McCroskey, 2004, p. 217). In this study, Richmond et al.’s Nonverbal Immediacy Scale for Observers (NIS-O) measured staff NVI. The NIS-O was designed to measure receivers’ perceptions of sources’ NVI in a variety of communication settings and contexts. In this study, participants were receivers; staff were sources; setting was a small residential four-year college; and context of collection was first-year seminar (freshmen) and follow-up seminar (sophomores) classrooms.

**Development of the NIS-O.** Measures for NVI date back to 1988 but early scales were unreliable (Richmond et al., 2003). In developing the NIS-O, items were refined from previous scales or created by its authors (Richmond et al., 2003). NIS-O was tested in college classrooms.

**Characteristics of the NIS-O.** The NIS-O consists of 26 closed-ended items in a 5-point Likert-type format, covers 13 components of NVI, and contains a positive and negative item for each component (Richmond et al., 2003). Items comply with balance recommended by DeVellis (2017). The scale also includes written instructions (Richmond et al., 2003). For example, to measure faculty NVI, students were asked to respond to the instructor from their most recent class, not the class where research occurred (Richmond et al., 2003).

**Reliability and Validity of the NIS-O.** The NIS-O was first administered to 1,241 college students (Richmond et al., 2003). Internal reliability estimates were  $r = .90$  or above and showed removal of any item would not increase reliability (Richmond et al., 2003). More recent research reports reliability estimates of  $r = .92$  (LaBelle et al., 2013). Content validity is

defended by 13 dimensions of NVI represented (Richmond et al., 2003). Analyses showed the NIS-O measured one construct (Richmond et al., 2003).

**Modifications of the NIS-O Scale.** Original items were awkward with “he/she” in nearly every item (Appendix F). Based on author-encouraged flexibility (Richmond et al., 2003), the original NIS-O was modified, and gender pronouns removed. This change aligned with APA (2020) and reflected current vernacular of student support (Arendale, 2020). The revised instrument had a leader above all items that stated, “The staff person I am considering...”.

**Field Test and Field Notes.** The study NIS-O version was field-tested with 17 student volunteers (Appendix G). During administration, one student asked, “can we score you”? Another answered, “it says, outside of this classroom”. Two students quickly discussed staff members chosen and another said, “these questions just ask the same thing over again”. Participants completed scales quickly, completely, and easily. No special permissions were required; an image that captures and restates the generous sharing policy appears in Appendix E.

## **Validity of Current Study**

### ***Internal Validity***

Internal validity is a concern when subjective instruments are used (Creswell, 2012). Questionnaires introduce method variance and threaten construct validity (Mitchell, 1985). For example, if administered at a certain time of day or within large groups, results may differ from results with the same participants at different times or groupings (Mitchell, 1985).

**Reduced Threat to Internal Validity.** In this study, materials were administered in naturally occurring classrooms led by of 30 unique faculty/staff instructors, over 23 different days, and 11 different times. This increased variability between participants, bolstered content validity, and in turn, reduced threats to internal validity (Mitchell, 1985). Further, field tests

improved content validity. Finally, instruments were established in both communication and higher education literature (Houser & Hosek, 2018; McCroskey, 1992; Richmond et al., 2003).

### ***External Validity***

This study shows strength in external validity as it was conducted in real-life settings and contexts (small residential colleges, FYS/FUS programs, and classrooms). This design was convenient to participants, instructors, and researchers as it occurred briefly during class time. Results may or may not be generalized, extended, or applied to other college classrooms, programs, and/or higher education institutions (Creswell & Creswell, 2020).

### **Procedure**

#### ***Human Subjects***

This study was approved by the Human Subjects Committee of the host college and Old Dominion University. Approval letters appear respectively in Appendices H and I. Before data were collected, all participants signed an informed consent (Appendix J).

#### ***Institutional Support and Timelines***

Three faculty directors played key roles in this study's implementation. One was in charge of freshmen's one-credit class (FYS), a second for its linked two-credit course, and a third for sophomores' three-credit course (FUS). Each balanced the project's purpose with classroom time required and championed the project. Their sponsorship contributed to 96% instructor agreement to allow research in their classrooms.

FYS and FUS instructors positively influenced administration of this study. All nine faculty FUS instructors accommodated research visits.; a timeline appears in Appendix K. Because FYS was linked to an academic class, 44 faculty and staff instructed 22 cohorts of freshmen. Two faculty declined, but 42 agreed to allow research visits, were flexible with

schedules, each other, and shifts in timing. This cooperation allowed recruitment within all cohorts of FYS; a timeline appears in Appendix L. Their support toward the project likely influenced the number of students who agreed to participate.

### ***Participants***

After coordination with respective instructors, freshmen and sophomores were visited in naturally formed FYS/FUS classrooms. Full-time students were recruited in-person as a group. Absent students and those who attended virtually were not recruited.

**Sophomores.** Sophomore participants were enrolled in their third semester of college. They persisted after their first semester and were retained after a second or transferred in from another institution after two semesters. Most sophomores were recruited before midterm.

**Freshmen.** Freshmen participants were first-time students at the host college. All freshmen were recruited after midterm. This allowed time for them to become acquainted with campus and interact with others before completing materials.

### ***Data Collection***

While data from this study are quantitative, they were divided by source. Subjective data are participants' indications on instruments and forms. Objective data are sourced from reports of record. Chronological collection by data type is described below.

**Subjective Variables.** While collection of subjective variables occurred in different classrooms at various times, materials were administered simultaneously within each classroom. Informed by field tests, paper packets were delivered in-person to students present. The researcher introduced the project and explained informed consent (Appendix J). With few exceptions, the researcher was present the entire time, available for questions, and waited while materials were completed. She noted the time and recorded observations. As participants



finished, she collected each packet. When participation concluded, she gathered materials and left the classroom. Within each classroom, participants completed an informed consent, two instruments, contextual questionnaire (Appendix K), and demographic sheet (Appendix L) in approximately 15 minutes. Because many did not know their student identification number (SID), study packets included a name space. To verify informed consent, the researcher examined each packet. Per students' request, she scanned and emailed signed copies of their informed consent. For those that neglected to sign, she invited them to consent electronically.

***Contextual Questionnaire.*** Information from this questionnaire was compiled. These subjective data were not evaluated as part of the study. Rather, data provides general context about students' experience with campus departments. Departments were listed alphabetically, and students marked their experience as positive, neutral, or negative. These marks were input directly into a designated Excel workbook.

***Organization of Subjective Study Data.*** All study data were processed on a password-protected computer. To organize subjective data, the researcher recreated paper materials (not including informed consent and contextual survey) in MS Forms and transferred the data by hand. After all subjective data were in Forms, she opened the file in MS Excel. Inputs were checked for errors and questions answered by reference to original data and form. At this stage, antecedents to subjective study variables had been collected. These included students' responses by item on the WTC (Appendix C) and the NIS-O (Appendix G). Study variables WTC and NVI were electronically calculated from these items. After data input, completed paper instruments were stored, locked, and will be destroyed after five years (Creswell & Creswell, 2020).

***Subjective Control Variables.*** Participants provided their name and month and year of birth. Participants not 18 years or older were excluded from this study. Because participation in

college sports is identified as a factor in success, students marked their athletic status and sport (Astin, 1972; Kuh, 2009). Similarly, students reported work-study (Kuh, 2009), residential (Oades et al., 2011), and first-generation status (Schreiner et al., 2011). They also reported membership in student organizations (Mayhew et al., 2016).

**Objective Variables.** Objective variables were collected following the Fall 2020 semester. Values were retrieved from reports of record with appropriate permission. For each participant, objective study variables collected were GPA, credit hours (completed and attempted), and number of academic coaching sessions.

**Objective Control Variables.** Objective control data were sourced from reports of record. Pre-college variables were home state and high school GPA. Within college controls were declared major, academic standing (earned in Fall 2020), persistence to Spring 2021, and FYS grade. In this study, FYS grade represents engagement. For freshmen, this grade reflected the one-hour course completed in Fall 2020. For sophomores, it was FYS grade earned in Fall 2019. For sophomore transfer students, FUS grade was used as a proxy for FYS grade.

### ***Data Management***

To de-identify cases, the researcher matched SIDs with students' names. Objective data were merged with subjective data into the secure workbook and names were removed. Student information was further de-identified by assigning a logical case number known only to the researcher. Data with case number (but without SID) were exported into IBM Students Statistical Procedures for Social Science (SPSS) version 27.

### **Data Reports**

Data collection is described by number of classrooms visited, students recruited, and study participants. Power analyses results were presented to show adequate sample size. A

medium effect size in social sciences is .30 (Cohen, 1992). With inputs of four independent variables, significance level ( $\alpha = .05$ ), and power ( $1 - \beta = .80$ ), G\*Power calculated 84 participants needed for a valid sample size for correlation and 42 participants linear regression (Faul et al., 2009). Reliability estimates for instruments used were calculated and reported. For WTC, this includes the full instrument, three original subscales, and an exploratory subscale (WTC staff). Reliability estimates for NIS-O were calculated and reported for its full scale.

## **Data Analysis Plan**

### ***Descriptive Statistics***

Descriptive statistics were presented for all participants, freshmen, and sophomores. Within groups, data were further described by pre-college and within-college characteristics. Study variables were presented with mean, median, and measures of dispersion.

### ***Inferential Statistics***

Inferential statistical analyses used in this study were independent-samples *t*-tests, correlation, and multiple regression. This study focused on relationships between variables within groups; however, to inform subsequent analyses, independent-samples *t*-tests between freshmen and sophomores were performed on high school GPA scores and two continuous controls (Pallant, 2020). Beyond *t*-tests, differences between groups were not analyzed. Correlation analyses between each independent variable and dependent variable informed Research Questions 1-4. Multiple regression analyzed to what extent independent variables worked together (or not) to influence the dependent variable and informed Research Question 5.

**Independent-Samples *t*-Tests.** Among early-career students, freshmen and sophomores formed two natural groups with similar study conditions. Independent-samples *t*-tests showed

similarities and differences between groups when compared by high school GPA (pre-college control), FYS grade (within-college control), and GPA (dependent variable).

**Correlation.** Study variables met assumptions required for analyses. Correlation is widely used in social science literature to answer research questions about relationships (Creswell & Creswell, 2020). Research Questions 1-4 queried relationships between variables: How does each independent variable affect early-career GPA of students enrolled in small residential colleges? Pearson's  $r$  indicated significant correlations, their direction and strength, and informed answers to Research Questions 1-4. Synthesis of research questions and analytical approach appear in Table 3. Subsequent analyses determined relationships among independent variables. A final analysis determined associations between control variables and the dependent variable. Findings were reported for all students, freshmen, and sophomores.

**Multiple Regression.** Study variables were tested for assumptions required for multiple regression. This analysis is widely used in social science research to answer research questions that query about relationships (Creswell & Creswell, 2020). Multiple regression informed Research Question 5: To what extent do independent variables (alone and/or in combination) affect early-career GPA of students enrolled in small residential colleges? GPA was regressed on independent variables and results showed each variable's contribution to variance in GPA and informed Research Question 5. Study variables without significance were not analyzed further. Follow-up sequential regression included control variables significant in correlation. After controlling for other variables, sequential regression showed each independent variable's contribution to variance in GPA and further informed Research Question 5.

**Table 3****Synthesis of Research Questions and Analyses**

Research Question	Independent Variable(s)	Data Analysis
1. How does willingness to communicate affect early-career GPA of students enrolled in small residential colleges?	WTC	Correlation
2. How does staff nonverbal immediacy affect early-career GPA of students enrolled in small residential colleges?	Staff NVI	Correlation
3. How does credit hour completion ratio affect early-career GPA of students enrolled in small residential colleges?	CCR	Correlation
4. How does participation in academic coaching affect early-career GPA of students enrolled in small residential colleges?	Academic Coaching	Correlation
5. To what extent do WTC, staff NVI, CCR, and participation in academic coaching (alone and/or in combination) affect early-career GPA of students enrolled in small residential colleges?	WTC NVI Academic Coaching CCR	Multiple Regression

*Note.* Dependent variable = GPA

**Summary**

The purpose of this quantitative study was to explore small residential campuses and determine how students' early career success, measured by GPA, was affected by willingness to communicate (WTC), staff nonverbal immediacy (NVI), credit hour completion ratio (CCR), and

participation in academic coaching. This chapter described design and research methods of this study including variables, instruments, and statistical analyses used to address research questions. Chapter IV describes findings of this study. Chapter V provides a summary of the study and conclusions, implications, recommendations for further research, and a final study conclusion.

## CHAPTER IV

### FINDINGS

Chapter III described the methodology of this study, including the research questions, design, and participants. Variables were discussed, instruments described, and methods of analyses defended as appropriate and matched to research questions. Chapter III also discussed sources of data by student (subjective) and institution (objective). This chapter reports on collection, describes data, explains analyses performed, and presents findings.

First, data collection describes implementation realities compared to planned methods. Next, results of a contextual questionnaire are shared. The process of data examination is discussed and instruments' analyses are reported. The chapter proceeds with descriptive statistics of participants and variables; decisions based on descriptive reports are discussed. The chapter continues with pre-analysis and correlation results that informed Research Questions 1-4. The chapter culminates with a regression model for study variables that partially answered Research Question 5 and presents an alternative model that further informs its answer. The chapter concludes with a brief report of additional findings.

#### **Data Collection Results**

Data collection from participants enrolled in first-year seminar (FYS) or follow-up seminars (FUS) began September 29, 2020 and ended November 16, 2020. Plans for sophomores' research to be complete by midterm were not met; however, one week after midterm, eight out of nine collection sites were visited and 100% complete three weeks after plan. For freshmen, 22 FYS classrooms were visited over 14 days after midterm.

The overall response rate of this study was 95% ( $n = 362$ ). Of sophomores registered in FUS, 80% of students were present and recruited. Of sophomores approached, 100% participated

( $n = 103$ ). Of first-time freshmen registered in FYS, 83% were present and recruited. Of freshmen approached, 93% participated ( $n = 259$ ). Absent students were not recruited. Of 466 students enrolled in both courses, 78% were represented in these data. Per their request, 54 participants were sent a scanned copy of their signed informed consent. Seven students completed materials, neglected to sign, and were invited to consent electronically. Five affirmed consent, one denied, and one did not respond. The latter two were not included as participants.

Participants completed a contextual questionnaire and marked impressions of 19 staff departments, as: “helpful and/or supportive”, “unhelpful and/or not friendly”, or “I have no experience with this department”. Due to researcher error, some freshmen did not complete the questionnaire. In one classroom, research began near the end of class, after the scheduled time. To compensate, the researcher presented staff department questions as optional. Of 16 presented with this option, ten chose not to complete it. The contextual questionnaire was completed by 352 participants who marked one choice for each of 19 departments, garnering 6,688 reports on student impressions of staff departments. There was no scale, but responses (positive, negative, and neutral) were counted for each student and department. When rating 19 departments, students averaged over nine positive marks ( $M = 9.24$ ,  $SD = .16$ ) and also marked negative ( $M = .49$ ,  $SD = .01$ ) and neutral ( $M = 9.27$ ,  $SD = .17$ ) experiences. Overall, participants who had experience with a department reported their impressions as positive. For totals by department, positive responses ranged from 13-85% as shown in Table 4. The ratio of positive to negative impressions was 19:1. As planned, these data were not used to analyze research questions or draw conclusions.



**Table 4****Student Perceptions of Staff Departments**

Department	Freshmen, <i>n</i> = 249			Sophomores, <i>n</i> = 103			% of positive responses <i>n</i> = 352
	positive	negative	neutral	positive	negative	neutral	
Admissions	212	4	33	85	4	15	84
Academic Resources	143	2	104	72	1	30	61
Athletic	155	3	91	59	0	44	61
Auxiliary Services	34	1	214	16	0	87	14
Campus Involvement	118	2	129	48	2	53	47
Career Center	100	3	146	53	3	47	44
Community Living	145	10	94	55	13	35	57
Dining Services	196	18	35	64	20	19	74
Disability Services	36	3	210	10	1	92	13
Diversity & Inclusion	56	4	189	24	1	78	23
Education Abroad	42	1	206	20	3	80	18
Financial Aid	183	13	53	78	8	17	74
Health & Wellness	155	5	89	63	8	32	62
Information Technology	81	8	160	36	5	62	33
Library	204	6	39	88	3	12	83
Physical Plant	88	4	157	47	1	55	38
Records	128	7	114	76	3	24	58
Tutoring & Learning Lab	102	3	144	58	0	45	46
Writing Center	82	1	166	39	0	64	34

**Data Examination and Reliability of Scales**

Power analysis determined minimum sample size in correlation and regression as 84 and 42 respectively. The sample size overall and each subgroup (freshman and sophomore) exceeded these thresholds. During data examination, outliers were noted, but no alterations were made.

Data were organized for analyses by research question and variable.

Reliability of scales were analyzed by Cronbach's alpha in SPSS. Scales in this study were slightly modified. Because scales can vary based on context, reliability estimates should be demonstrated *in situ* (Mazer & Graham, 2015; Pallant, 2020). Pallant (2020) guides alpha levels

of .85 and over as high and those .70 and above are acceptable in social science research. For WTC, historical literature showed results of .85 and above (McCroskey, 1992).

### ***Willingness to Communicate (WTC) Scale Reliability***

Among 20 items on WTC, 12 are scored and measure an individual's tendency to initiate communication (McCroskey, 1992). WTC showed a high level of internal consistency ( $\alpha = .87$ ). Analyses included correlation between each item and remaining items' sum. For each full-scale item, Pearson correlation coefficients were significant and ranged from  $r = .38$  to  $r = .69$ ,  $p < .001$ ; therefore, all items remained. The 12 scored WTC items also measure three receiver-types (stranger, acquaintance, and friend). These subscales contain four items each and were evaluated for alpha reliability estimates. The subscales WTC stranger ( $\alpha = .82$ ), WTC acquaintance ( $\alpha = .79$ ), and WTC friend ( $\alpha = .72$ ) showed reliability above the acceptable threshold of .70.

The full WTC scale included eight distractors that did not contribute to total score. Distractor items were designated as a staff WTC subtype. Items asked the percentage of time participants would initiate communication with adults on campus in eight different situations. Analyzed as an exploratory subscale, staff WTC's reliability estimate was  $\alpha = .79$ . Analyses included correlation between each item and remaining items' sum. For each staff WTC item, coefficients were significant and ranged from  $r = .49$  to  $.66$ ,  $p < .001$ .

### ***Nonverbal Immediacy Scale for Observers (NIS-O) Reliability***

The NIS-O consisted of 26 items that measured perceptions of another's immediacy (Richmond et al., 2003). Observers report on nonverbal behaviors like smiling, gestures, and eye contact. In this study, participants considered interactions with a staff member outside of the classroom. Participants were not asked to identify the person considered; however, three students wrote, "coach", "lady at the coffee shop", and "guy trimming trees". Regarding certain items,

some students made notations on their paper such as, “wears a mask”, “hard to answer- COVID”, and “I don’t like these face questions”. Six students did not answer every item and total scores were calculated without a value for unanswered items per Richmond et al. (2003).

Thirteen items on the NIS-O are negatively worded and thus reversed for analysis. Cases with zero on any item ( $n = 6$ ) were not included in reliability tests. The NIS-O on remaining cases ( $n = 356$ ) tested at a high level of internal consistency ( $\alpha = .85$ ). When analyzed by item, however, correlation of seven items fell below the .30 mark with a range of  $r = .16$  to  $.30$ ,  $p < .001$ . The analysis also showed elimination of any one item would not change the reliability estimate of the scale. Considering this information, no items were excluded.

### **Descriptive Statistics**

Data are organized by pre-college and within-college characteristics and described by representations within each category. Data were aggregated for all participants and disaggregated by class level (freshmen and sophomores). Descriptive statistics for study variables follow participant data.

### ***Participants***

In Fall 2020, participants in this study ( $n = 362$ ) were 18 to 21 years old. The mean age of freshmen ( $n = 259$ ) was 18.4 ( $SD = .54$ ) and sophomores ( $n = 103$ ) was 19.6 ( $SD = .62$ ). All freshmen participants were first-time students; all sophomores were continuing ( $n = 97$ ) or transferred students ( $n = 6$ ) at the host college; and all participants were full-time students. Participants reported the race and gender they identified with. Results did not represent a diverse sample by race or gender. Gender was 97.8% male or female and race was 86.4% white.

**Pre-College Characteristics.** Pre-college variables collected appear in Table 5. Gender was dummy coded (three codes for four categories) with male ( $n = 169$ ) as the reference group.

Six categories of race were similarly coded with white ( $n = 313$ ) as the reference group. Twelve responses for race provided no information and were categorized as unknown. High school GPA ( $M = 3.60$ ,  $SD = .40$ ) appears dichotomous in this table, but was analyzed continuously.

**Table 5**

**Pre-college Characteristics of Participants**

Characteristic	All participants $n = 362$		Freshmen $n = 103$		Sophomores $n = 259$	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<b>Gender</b>						
Female	185	51.1	129	49.8	56	54.3
Male	169	46.7	124	47.9	45	43.7
Transgender	3	0.8	2	0.8	1	1.0
Unknown	5	1.4	4	1.5	1	1.0
<b>Race/Ethnicity</b>						
Caucasian	313	86.4	221	85.3	92	89.3
African American	10	2.8	10	3.9	0	--
Two or more Races	9	2.5	9	3.5	0	--
Unknown	12	3.3	8	3.1	4	3.9
Asian	9	2.5	6	2.3	3	2.9
Hispanic/Latino	9	2.5	5	1.9	4	3.9
<b>Generation</b>						
Continuing	224	61.9	158	61.0	66	64.1
First	138	38.1	101	39.0	37	35.9
<b>Home Residence</b>						
In-state	287	79.3	199	76.8	88	85.4
Out-of-state	75	20.7	60	23.2	15	14.6
<b>High School GPA</b>						
3.7 and higher	182	50.3	133	51.3	49	47.8
Below 3.7	180	49.7	126	48.7	54	52.4

**Within-college Characteristics.** Descriptive data of within-college characteristics appear in Table 6. Participants self-reported current membership in groups and organizations.

Conversely, FYS grade was sourced from reports of record. While dichotomized for this table, FYS grade ( $M = 3.63$ ,  $SD = .82$ ) was a continuous control variable, ranged from 0.00 to 4.00 and evaluated at the scale level.

**Table 6****Within-college Characteristics**

Characteristic	Freshmen <i>n</i> = 259		Sophomores <i>n</i> = 103		All participants <i>n</i> = 362	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Campus employment						
no work-study	198	76.4	62	60.2	260	71.8
work-study	61	23.6	41	39.8	102	28.2
College residence						
on-campus	237	91.5	94	91.3	331	91.4
off-campus	22	8.5	9	8.7	31	8.6
FYS grade*						
grade B and above	222	85.7	98	95.1	320	88.4
grade C and Below	37	14.3	5	4.9	42	11.6
Sports						
student-athlete	146	56.4	44	42.7	190	52.5
student (non-athlete)	113	43.6	59	57.3	172	47.5
Student organizations**						
none listed	145	56.0	45	43.7	190	52.5
one or more	114	44.0	58	56.3	172	47.5

\*FYS grade reflects grade earned freshman year

\*\*does not include collegiate sports

***Descriptive Statistics of Variables***

**Research Variables.** Descriptive statistics for independent variables used in correlation and regression analyses appear in Table 7, which included dependent variable GPA and independent variables WTC, Staff NVI, CCR, and academic coaching. Statistics include number of cases, mean, and standard deviation. Median, skewness, and kurtosis are also included to illustrate dispersion.

**Research Variables Describe Participants' Progress.** Within college GPA was chosen to measure achievement and/or progress. For participants in this study, GPA ranged from .001 to 4.000; 91% earned GPAs over 2.00 (*n* = 329). Similarly, CCR was an achievement and

progression variable. For participants in this study, CCRs ranged from .05 to 1.00; 91% earned .80 and over ( $n = 330$ ); and 94% ( $n = 342$ ) earned .67 and over (met criteria for SAP).

**Table 7**

**Descriptive Statistics for Research Variables**

Variable	<i>M</i>	<i>SD</i>	Skew	Kurtosis	<i>Mdn</i>
GPA	3.04	.78	-1.65	1.48	3.17
Willingness to Communicate	66.73	15.93	-0.51	.09	69.17
Staff Nonverbal Immediacy	98.20	11.37	-0.49	.29	99.00
Credit Hour Completion Ratio	.91	.17	-2.74	.91	1.00
Academic Coaching	1.52	2.88	2.33	5.02	0.00

*Note.*  $n = 362$

**Data Decisions.** Inspection of dispersion plots suggested normal distribution for GPA, WTC, and Staff NVI and SPSS identified no extreme outliers and kurtosis values were less than 2.00. While all three variables were skewed to the right indicating more instances of higher scores, values were considered acceptable and no changes were made to variables GPA, WTC, and Staff NVI. Two variables required transformation, are discussed below, and visuals used for transformation decisions appear in Appendix O.

**Credit Hour Completion Ratio.** The histograms of CCR visually depicted a wide range of scores from .001 to 1.00 (heavily skewed towards higher ratios) and the mode was 1.00 ( $n = 208$ ). SPSS identified 13 outlying scores at both ends of the range; all 26 were labeled extreme. Cases were checked for errors and determined valid. Their removal would have eliminated authentic scores of the highest and the lowest CCRs. In similar situations, Field (2013) lists reverse log transformation as an option. Reverse log transformation was performed.

For negative skew, reverse log transformation shifts extreme scores from the right toward the middle of the distribution. Post-transformation visual inspection of histogram showed more bands of scores under the normal curve; however, the new skew value for log-transformed CCR

(-2.25) remained outside desired value of -2.00. Considering visual improvements, sample size, central limit theorem, and general statements by Field (2013) and Keith (2015) that normality of samples are less important than normality of their residuals, no additional transformations were performed. Descriptive statistics for log-transformed CCR were:  $M = 1.97$ ,  $SD = .06$ , and kurtosis = 5.38 (improved from 8.46).

***Academic Coaching.*** Academic coaching represents a discrete number of sessions students attended during college. Histograms showed distribution as positively skewed due to a large number of students who attended zero sessions ( $n = 277$ ). Further, count variables cannot be truly continuous as all possible values are whole numbers (Sweet & Grace-Holden, 2010). When zero is the most common value, data sets can resist log transformations and are not recommended for regression analysis (Sweet & Grace-Holden, 2010). One option is to change the variable to categorical, which can still yield meaningful data (Akos, 2020; Sweet & Grace-Holden, 2010). For these reasons, variable academic coaching was transformed to a dichotomous variable, coded with the value 1 to represent attendance to the activity one or more times. Descriptive statistics for dichotomous academic coaching were:  $M = .23$ ,  $SD = .42$ . The mean indicated 23% of participants were academically coached ( $n = 85$ ).

### **Pre-Analysis and Correlation**

When two different groups experience similar study conditions, independent-samples  $t$ -tests are appropriate (Pallant, 2020). Analyses were performed on three continuous variables with participants divided by class (freshmen and sophomores): control variable high school GPA, control variable FYS grade, and dependent variable GPA. Results appear in Table 8. Beyond independent-samples  $t$ -tests, statistical tests for differences between groups (freshmen and sophomores) were not performed.

**Table 8****Independent-Samples *t*-tests by Class Level**

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	Levene's Test for Equality of Variance ( <i>p</i> )	equal variances
HS GPA			-0.29	0.66	.19	not assumed
Freshmen	3.59	.41				
Sophomores	3.60	.36				
FYS Grade			-4.15	<.001	<.001	assumed
Freshmen	3.55	.92				
Sophomores	3.88	.40				
GPA			-2.86	.005	<.001	assumed
Freshmen	2.98	.86				
Sophomores	3.19	.54				

*Note.*  $n = 362$

There was no significant difference in high school GPA between freshmen and sophomores. The magnitude (mean difference = -.01, 95% CI [-.10, .08]) was small ( $\eta^2 = 2.3 \times 10^{-4}$ ) and showed .02 % of variance in high school GPA was explained by class level. The difference in FYS grade was significant between freshmen and sophomores. The magnitude (mean difference = -.28, 95% CI [-.43, -.15]) was small ( $\eta^2 = 4.6 \times 10^{-2}$ ) and showed 5% of variance in FYS grade was explained by class level. The difference in GPA was significant between freshmen and sophomores. Magnitude (mean difference = -.22, 95% CI [-.36, -.07]) was small ( $\eta^2 = .022$ ) and showed 2% of variance in FYS grade is explained by class level.

Correlation was the next inferential analyses conducted and first explored relationships between study variables. Table 9 shows results from correlation analyses for all students, freshmen, and sophomores. Correlation results of the relationship between GPA and each independent variable informed answers to Research Questions 1-4.



**Table 9****Correlation Coefficients of Research Variables**

Variable	1	2	3	4	5
all participants; $n = 362$					
1. GPA	--				
2. WTC	-.02	--			
3. Staff NVI	.16**	.18**	--		
4 log CCR	.70***	-.01	.12*	--	
5. A_coach	-.16**	.003	-.10	-.12*	--
freshmen; $n = 259$					
1. GPA	--				
2. WTC	-.03	--			
3. Staff NVI	.20**	.21**	--		
4 log CCR	.71***	-.01	.14*	--	
5. A_coach	-.16*	.01	-.14*	-.12	--
sophomores; $n = 103$					
1. GPA	--				
2. WTC	.04	--			
3. Staff NVI	-.03	.13	--		
4. log CCR	.64***	.07	-.01	--	
5. A_coach	-.30**	-.01	-.03	-.29**	--

Note. Listwise. Variable CCR is log-transformed. Variable A\_coach is dichotomous.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Research Question One: Willingness to Communicate and GPA**

Research Question 1 explored the relationship between WTC and early-career GPA.

When examined with all participants, correlation analysis showed no significant relationship between WTC and GPA,  $r(362) = -.02$ , *ns*. Similarly, no relationship was found between WTC and GPA in freshmen  $r(259) = -.04$ , *ns*; and sophomores,  $r(103) = .04$ , *ns*. In other words, as WTC and GPA varied between individuals, variances of WTC and GPA were not associated.

**Research Question Two: Staff Nonverbal Immediacy and GPA**

Research Question 2 explored the relationship between staff nonverbal immediacy (NVI) and early-career GPA. When examined in all participants, correlation analysis showed a

significant and positive relationship between Staff NVI and GPA,  $r(259) = .16, p = .003$ . This relationship also existed in freshmen,  $r(259) = .20, p = .001$ . In other words, among participants in these groups, students with higher GPAs are more likely to report higher Staff NVI scores. This relationship did not exist in sophomores,  $r(103) = -.03, ns$ .

### ***Research Question Three: Credit Hour Completion Ratio and GPA***

Research Question 3 explored the relationship between credit hour completion ratio (CCR) and early-career GPA. When examined with all participants, correlation analysis showed a significant and positive relationship between log CCR and GPA,  $r(362) = .70, p < .001$ . This relationship also existed in freshmen,  $r(259) = .71, p < .001$ ; and sophomores,  $r(103) = .64, p < .001$ . In other words, among participants in these groups, students with higher GPAs are more likely to have higher CCRs.

### ***Research Question Four: Academic Coaching and GPA***

Research Question 4 explored the relationship between academic coaching and early-career GPA. Academic coaching was binary coded (1 = participated) and labeled A\_coach in tables. For all participants, correlation analysis showed a significant and negative relationship between participation in academic coaching and GPA,  $r(362) = -.16, p = .003$ . This relationship also existed in freshmen,  $r(259) = -.16, p = .01$  and sophomores,  $r(103) = -.30, p = .002$ . In other words, for participants in these groups, students with lower GPAs are more likely to participate in academic coaching.

### ***Relationships Among Independent Variables***

Correlations with GPA were not the only correlations shown among research variables. With other independent variables in the research model, WTC showed a significant and positive relationship with Staff NVI in all participants,  $r(362) = .18, p < .001$ . This relationship was also

observed in freshmen,  $r(259) = .20, p = .001$ . In other words, students in these groups who report high WTC are more likely to report high scores for Staff NVI. This relationship was not present in sophomores,  $r(103) = .13, ns$ .

With other independent variables in the research model, Staff NVI showed a significant and positive relationship with CCR in all participants,  $r(362) = .12, p = .03$ , and freshmen,  $r(259) = .12, p = .03$ . In other words, students with a high CCR are more likely to rate Staff NVI highly. This relationship was not present in sophomore students,  $r(103) = -.01, ns$ .

With other independent variables in the research model, CCR showed a significant and negative relationship with academic coaching in all participants,  $r(362) = -.13, p = .02$ ; and sophomores,  $r(103) = -.28, p < .001$ . In other words, for participants in these groups, students with a low CCR were more likely to participate in academic coaching. This relationship did not exist among freshmen,  $r(259) = -.11, ns$ .

### ***Relationships Between Control Variables and GPA.***

Control variables were analyzed by Pearson's  $r$  for correlations with dependent variable GPA. Results were reviewed in total and disaggregated. Seven control variables showed no significant relationship with GPA. Six control variables that correlated significantly with GPA from any group (all students, freshmen, and/or sophomores) appear in Table 10.

GPA and high school GPA were significantly correlated among all students and freshmen. This relationship was positive. Similarly, gender was significantly correlated with GPA among all students ( $n = 185$ ) and freshmen ( $n = 129$ ) with a positive relationship. Based on coding methods, this shows gender female associated with higher GPAs in these two groups.

**Table 10****Correlations Between Control Variables and GPA**

Characteristic	all students, $n = 362$		freshmen, $n = 259$		sophomores, $n = 103$	
	$r$	$p$	$r$	$p$	$r$	$p$
Pre-college						
High School GPA	.44***	< .001	.52***	< .001	.12	<i>ns</i>
Gender (female)	.24***	< .001	.30***	< .001	-.02	<i>ns</i>
Race						
African American	-.09*	.045	-.08	<i>ns</i>	--	--
Two or more races	-.12*	.01	-.12	<i>ns</i>	-.02	<i>ns</i>
Within-college						
Student-athlete (yes)	-.11*	.046	-.10	<i>ns</i>	-.07	<i>ns</i>
Student organizations	-.13*	.01	.10	<i>ns</i>	.17	<i>ns</i>
FYS grade	.62***	< .001	.64***	< .001	.38***	< .001

*Note.* Dichotomous subcategories with affect in parentheses. Dashes indicate no members in group. For sophomores, FYS grade was grade earned Fall 2019.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Two subcategories of race showed significant and negative correlations with GPA when analyzed for all students: African Americans ( $n = 10$ ) and participants who reported two or more races for this category ( $n = 9$ ). This relationship was not significant for freshmen. African Americans were not represented in sophomores. For sports, category of student-athletes ( $n = 146$ ) associated with lower GPAs in all participants. Similarly, participants who indicated membership in student organizations ( $n = 145$ ) were more likely to have lower GPAs in all participants. Finally, FYS grade was significantly correlated with GPA in all students, freshmen, and sophomores. The relationship was positive in all three groups. For sophomores, FYS grade reflects grade earned Fall 2019. This suggests, among participants in all groups, students with higher GPAs are more likely to also have higher scores on FYS grade.

## Regression Model for Study Variables

For multiple regression, certain assumptions must be met, and their analyses was guided by Laerd (2015). Because GPA and three independent variables were measured on a continuous scale, and academic coaching on a dichotomous scale, all study variables met measurement assumptions. Six remaining assumptions relate to how data fit the regression model. Output graphics used to evaluate assumptions appear in Appendix P.

The assumption of independence of residuals was met with Durbin-Watson statistic of 2.048. Linearity was evaluated between GPA and independent variables collectively by plotting studentized residuals against unstandardized predicted values. A scatterplot showed the relationship between GPA and the collection of independent variables as a horizontal band. Linearity was further evaluated between GPA and each continuous independent variable using partial regression plots. All relationships between continuous independent variables and GPA met assumptions for linearity. Homoscedasticity was evaluated by examination of plotted studentized residuals against unstandardized predicted values. Spread of residuals in height was relatively stable which informed homoscedasticity was satisfied. Multicollinearity was evaluated by inspection of correlation coefficients, tolerance values, and reciprocal of tolerance values (VIF). The variables in the regression model met the assumption of no co-linearity with other variables. Unusual points including outliers, high leverage points, and highly influential points were evaluated.

One outlier (case 152) was identified. For this case, predicted value for GPA was .93 and actual GPA was 3.25. Original data sources were observed and showed this case as an extreme outlier on CCR. Values on CCR's antecedents were authentic but unusual. The participant attempted 17 hours, completed four and withdrew from 13 (CCR = .2353). For this case, scores

on other independent variables were not unusual. Leverage points were created by SPSS, evaluated, and deemed acceptable. Influential points acceptable with .17 as the highest value. The final test for assumptions analyses was normality of residuals (errors in prediction). Normality of residuals were confirmed by histogram examination. The mean and standard deviation of this distribution were acceptable. Normality of residuals was finalized by the P-P plot, closely aligned with the diagonal.

Decisions were made based on assumption results for one case and one independent variable. While one case was identified as an outlier, these data met assumptions for unusual points on both tests of leverage and influential points. Further, as guided normality of residuals was strong with the case included (Field, 2013). For these reasons, the single outlier was preserved.

Independent variable WTC was removed from the regression model. Removal was first considered when no significant relationship WTC and GPA was analyzed by correlation. Because correlation does not control for other variables, removal of WTC was delayed. Removal of WTC was revisited during assumption tests for linearity that showed a linear relationship between WTC and GPA, but a slope very close to zero ( $b = .002$ ). Removal of WTC was finalized based on additional SPSS output that showed no significant influence of WTC on GPA ( $b = -.001, p = .456, 95\% \text{ CI } [-.005, .002]$ ). Zero within the confidence interval further confirmed no statistical influence between WTC and GPA. With assumptions for multiple regression satisfied and decisions justified, analyses continued. Independent variables in the model were Staff NVI, log CCR, and A\_coach. GPA remained the dependent variable.

### ***Research Question Five: Study Variables and GPA***

Research Question 5 explored the relationship between independent variables and early-career GPA. Multiple regression was performed on all participants then repeated with participants split by class. Table 11 shows coefficients for each variable in the model and was reported for all students, freshmen, and sophomores. GPA was regressed on Staff NVI, log CCR, and A\_coach. This model fit the data as shown by  $R^2 = .506$  and adjusted  $R^2 = .502$ . For all students, the regression model showed these three variables explained a significant 50% of variance in GPA,  $F(3, 358) = 120.71, p < .001, MSE = .31$ . In this model, A\_coach did not contribute significantly to variance in GPA ( $b = -.08, p = ns$ ).

**Table 11**

#### **Regression Models of GPA on Independent Study Variables**

Independent Variable	<i>b</i>	$\beta$	<i>t</i>	<i>SEM</i>	<i>R</i>	adj <i>R</i> <sup>2</sup>
all students; <i>n</i> = 362						
				.31	.711	.502***
Staff NVI	.005*	.08*	2.05			
log CCR	9.62***	.69***	18.19			
A_coach	-.14	-.08	-2.01			
freshmen; <i>n</i> = 259						
				.36	.720	.513***
Staff NVI	.008*	.10*	2.37			
log CCR	9.32***	.70***	15.65			
A_coach	-.13	-.06	-1.34			
sophomores; <i>n</i> = 103						
				.17	.649	.404***
Staff NVI	-.001	-.024	-.31			
log CCR	12.39***	.06***	7.64			
A_coach	-.14	-.13	-1.57			

*Note.* *SEM* = Standard Error for Model

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Freshmen.** For freshmen, GPA was regressed on Staff NVI, log CCR, and A\_coach. This model fit the data as shown by  $R^2 = .519$  and adjusted  $R^2 = .513$ . For freshman participants, ( $n = 259$ ), the regression model showed these three variables accounted for a significant 51% of variance in GPA,  $F(3, 255) = 90.74, p < .001, MSE = .36$ . For freshmen, A\_coach did not contribute significantly to variance in GPA ( $b = -.13, ns$ ).

**Sophomores.** For sophomores, GPA was regressed on Staff NVI, log CCR, and A\_coach. This model fit the data as shown by  $R^2 = .422$  and adjusted  $R^2 = .404$ . For sophomore participants, ( $n = 103$ ), the regression model showed these three variables accounted for a significant 40% of variance in GPA,  $F(3, 99) = 23.46, p < .001, MSE = .17$ . For sophomores, one independent variable, log CCR ( $b = 9.62, p < .001$ ), explained variance in GPA significantly. SPSS output for Research Question 5 appears in Appendix Q.

**Sequential Regression Model with Control Variables.** As a follow-up to multiple regression with study variables, sequential regression was performed with control variables. High school GPA, known to influence college retention and completion, was added to the regression model. Justified by correlation findings within this report, FYS grade was added. Order of variables is often determined by order of events (Field, 2013). High school GPA occupied the first step in sequential regression. Assumptions for multiple regression were met. Two outliers were identified but not removed. GPA was regressed on high school GPA in the initial step then regressed on Staff NVI, log CCR, and FYS grade in a second step. Due to lack of significance shown in multiple regression, A\_coach was not included in this model.

Resulting analyses further informed Research Question 5. With high school GPA as a single independent variable, results showed a good fit between variables and data. The coefficient of determination ( $R^2 = .193$ ) and adjusted coefficient ( $R^2 = .191$ ) were similar. High



school GPA explained a significant 19% of variance in GPA,  $F(1, 360) = 86.35, p < .001, MSE = .50$ ). Addition of three independent variables in a second step demonstrated a model with good fit. The coefficient of determination ( $R^2 = .605$ ) and adjusted coefficient ( $R^2 = .601$ ) were similar. Four independent variables together explained a significant 60% of variance in GPA,  $F(4, 357) = 136.91, p < .001, MSE = .25$ . Further, comparing coefficient of determination of high school GPA (step one) with coefficients of four independent variables together (step two), change in  $R^2$  was significant ( $\Delta R^2 = .412, p < .001$ ). In other words, when controlling for high school GPA, three variables (Staff NVI, log CCR, and FYS grade) explained 40% more variance than high school GPA explained alone, and this increase was significant.

In the final model, log CCR, high school GPA (control), and FYS grade (exploratory control) were statistically significant contributors. Staff NVI did not make a unique contribution to this model ( $b = 9.62, p = .480, 95\% \text{ CI } [-.003, .006]$ ). Zero in the confidence interval range further supported lack of significance. Guided by Field (2015), a variable's unique contribution can be explained using its semi-partial correlation coefficient ( $sr$ ), which excludes shared variance. With this coefficient, log-transformed CCR explained 20% of variance in GPA ( $sr = .20$ ). Research Question 5 was fully informed this way: When controlling for both high school GPA and other variables in the model, log CCR explained a significant amount of variance in GPA while WTC, Staff NVI, and academic coaching did not.

Remaining non-study variables were expressed on the same scale and described using unstandardized slopes. After controlling for other variables in the model, high school GPA significantly predicted GPA ( $b = .44, p < .001, 95\% \text{ CI } [.30, .58]$ ). In other words, for every unit high school GPA increased, GPA increased .44. Similarly, after controlling for other variables in the model, FYS grade significantly predicted GPA ( $b = .24, p < .001, 95\% \text{ CI } [.16, .32]$ ). In other

words, for every unit FYS grade increased, GPA increased .24. Output generated by SPSS for sequential regression series appears in Appendix R.

### ***Other Findings***

**WTC Subscales.** WTC subscales (stranger, acquaintance, friend) were analyzed and results mirrored results of the full scale. That is, subscales for WTC were significantly correlated with Staff NVI and were not significantly correlated with GPA or other independent study variables. When analyzed by class, correlation between WTC subscales and staff NVI was significant for freshmen but not for sophomores. Further, subscales of WTC did not correlate significantly with control variables in the regression model (high school GPA and FYS grade).

Exploratory subscale (WTC staff) behaved similarly as established subscales. Staff WTC was significantly correlated with Staff NVI in all students, freshmen, and sophomores.

A difference emerged when relationships between staff WTC and control variables were analyzed. While no significant relationship was detected in all students and freshmen, scores for staff WTC in sophomores were significantly correlated with FYS grade,  $r(103) = .23, p = .02$ ; and high school GPA,  $r(103) = .26, p = .02$ .

**Persistence and Satisfactory Academic Progress (SAP).** Data collected during this project revealed findings that fell outside of the research questions but relevant to the topic of student success and reported here. Persistence was collected with other objective variables. Satisfactory academic progress (SAP) was calculated from objective variables. Because persistence and SAP were considered semester results, they were not evaluated as variables of influence. For participants in this study, persistence rates from Fall 2020 to Spring 2021 were 91% for all students, 88% for freshmen, and 98% for sophomores. Both credits earned per semester and CCR contribute to SAP. Of those students who did not persist in Fall 2020, 23 met

SAP credit hour criteria and earned 12 or more ( $n = 33$ ,  $M = 14$ ,  $SD = 9.23$ ). Similarly, these 23 students met SAP ratio criteria with 67% of hours (or higher) completed. CCR was calculated with credit hours earned and attempted at the study college; hours completed were divided by hours attempted and ranged from 0.10 to 1.00 for these students ( $n = 33$ ,  $M = .73$ ,  $SD = .33$ ). Considering these scores, these findings suggest, for ten students, poor academic performance may have contributed to non-persistence. Conversely, for 23 students who met SAP criteria on both measures, academic performance was likely not a factor.

### **Chapter Summary**

The purpose of this quantitative study was to explore small residential campuses and determine how students' early-career success, measured by GPA, was affected by WTC, perceptions of Staff NVI, CCR, and participation in academic coaching. This chapter provided findings through a series of steps. First, characteristics of participants were described according to demographics, a pre-college factor (high school GPA), group memberships, and student engagement (FYS grade). Statistics were reported on all participants, freshmen, and sophomores. Second, pre-analysis revealed no statistical difference between these groups by high school GPA, but freshmen and sophomores displayed significant differences in FYS grade and college GPA.

Third, descriptive statistics were reported for each study variable and transformations were explained and reported for CCR (log CCR) and dichotomous academic coaching (A\_coach). Fourth, relationships between independent variables and dependent variable GPA were analyzed through correlation. Relationships between WTC and GPA were not significant within any group (RQ<sub>1</sub>). Relationships between Staff NVI and GPA were significant in all students and freshmen, (RQ<sub>2</sub>). Relationships between log CCR and GPA were significant in all groups (RQ<sub>3</sub>). The relationship between A\_coach and GPA was significant in all groups (RQ<sub>4</sub>).

Fifth, correlation between control variables and GPA revealed a variety of significant and non-significant relationships. FYS grade was the single control variable that correlated with GPA in all groups. Sixth, influence of Staff NVI, log CCR, and A\_Coach together on GPA was evaluated through regression and the model was significant for all three groups. A\_Coach did not contribute to the significance in any group. Seventh, sequential regression analysis was conducted for all students. High school GPA was regressed on outcome GPA. In a second step, Staff NVI, log CCR, and FYS grade were regressed on GPA. Both steps were significant. Further, difference in steps was significant. When controlling for high school GPA, log CCR contributed significance to the model, but Staff NVI did not.

Overall, the answer to the final research question (RQ<sub>5</sub>) came in two parts. Before high school GPA was considered, the partial answer: Staff NVI and log CCR explained a significant amount of variance in GPA while WTC and A\_coach did not. Including high school GPA in analysis, the full answer: When controlling for other variables, log CCR explained a significant amount of variance in GPA while WTC, Staff NVI, and A\_coach did not (RQ<sub>5</sub>).

Finally, after research questions were sufficiently answered, unexpected and significant influence of FYS grade on GPA was noted. Persistence rates were reported for each group. Satisfactory academic progress (SAP) was reported for participants who did not persist. Chapter 5 will summarize the study, discuss conclusions, explain limitations experienced, explore implications for theory and practice, and discuss recommendations for further research.

## **CHAPTER V**

### **SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

This chapter begins with a summary of the study including its problem, purpose, research questions, significance, and methods. Next, the major conclusions are summarized, organized by research question, and discussed in context with relevant literature. The chapter proceeds with discussions of limitations, implications for theory and practice, and recommendations for further research. This chapter completes the entire study with a conclusion.

#### **Summary of Study**

To address the issue of college completion in the United States, this quantitative study focused on early-career success within college. The problem of this study was to examine settings beyond large research universities and determine how interactions with professional staff relate to early-career student success. The anxiety/uncertainty management (AUM) theory narrowed the problem into a researchable purpose, informed research questions, and guided choices of subjective variables (Gudykunst, 1993). Tinto's (1993) interactionist model framed the study conceptually and informed the choice of objective variables. The combination of subjective and objective variables incorporates interpretivism into a quantitative inquiry which aligns with constructivism (Griffin, 2012). The purpose of this quantitative study was to explore small residential campuses and determine how students' early-career success, as measured by GPA, was affected by willingness to communicate, perceptions of staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching.

The following research questions (RQ) guided this study:

RQ<sub>1</sub>: How does willingness to communicate affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>2</sub>: How does staff nonverbal immediacy affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>3</sub>: How does credit hour completion ratio affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>4</sub>: How does participation in academic coaching affect early-career grade point average of students enrolled in small residential colleges?

RQ<sub>5</sub>: To what extent do willingness to communicate, staff nonverbal immediacy, credit hour completion ratio, and participation in academic coaching (alone or in combination) affect early-career grade point average of students enrolled in small residential colleges?

The significance of this study is supported by literature from student success, instructional/interpersonal communication, and positive communication/education. Research from large universities suggests students' perceptions, decisions, and behaviors relate to success, but other settings in higher education are not robustly represented (Furlich, 2016). Further, while previous research shows students' interactions with faculty and peers influence success (Hawken et al., 1991; Myers et al., 2014; Yaeger & Walton, 2011), student-staff interactions are insufficiently explored. Finally, professional staff's contribution to student success is under-represented in higher education literature (Graham, 2010; Roberts, 2018; Szekeres, 2011). This study addressed setting and interactant voids. Further significance was garnered from the context of this study. Research of FYS programs, while plentiful, show inconclusive results (Kuh et al., 2017).

The target population is full-time, traditional, and early-career U.S. students enrolled in small residential four-year colleges that provide campus support programs like first-year

seminars, learning communities, and/or academic coaching. The sample of this study was full-time, traditional, early-career students enrolled in a small residential liberal arts college (four-year) located in the Midwest that provided campus support programs including first-year seminars (FYS) and follow-up seminars (FUS). Students were purposively recruited from their FYS/FUS classrooms and response rate was 95%.

Instruments utilized in this study were McCroskey's (1992) willingness to communicate (WTC) scale and Richmond et al.'s Nonverbal Immediacy Scale for Observers (NIS-O) that respectively measured subjective variables WTC and staff nonverbal immediacy (NVI).

Sophomores completed instruments near midterm from FUS classrooms and freshman students after midterm from FYS. Objective variables GPA, credit hour completion ratio (CCR), and academic coaching were collected from official records at the conclusion of the semester (Fall 2020). This quantitative study was non-experimental cross sectional, correlational, and explanatory. Correlation design and analyses allowed investigation of relationships between variables. Multiple regression analyses explained each independent variable's contribution to early-career GPA and how independent variables work together to affect the outcome variable. GPA was official, cumulative, earned from the host college, and reported in Fall 2020. GPA included three semesters for most sophomores and one for freshmen.

### **Summary of Conclusions**

Findings from this study informed conclusions. Conclusions are summarized, discussed with insights from relevant research, and organized by research question. Research questions explored how independent study variables influenced early-career GPA.

### *Willingness to Communicate and Student Success*

Research Question 1 asked, how does willingness to communicate (WTC) affect early-career grade point average of students enrolled in small residential colleges?

**WTC Is Not Directly Associated with GPA.** WTC did not affect early-career GPA of students enrolled in small residential colleges. Conceptually, WTC represented a student factor in success models (Tinto, 1993). Research suggests qualities like WTC associate with continuance. Astin (1984) and Mayhew et al. (2016) posit students' willingness to engage and seek involvement associates with persistence. A return to WTC's nature and literature helps explain no direct association with GPA. McCroskey (1992) places trait-like WTC on a variable-type continuum between trait (immutable) and state (excitable). WTC, then, is less excitable than a state variable but can fluctuate with contextual stimulation (Beebe & Frei, 2018). Research shows WTC can vary within individuals. For example, Hodis et al. (2010) showed students' WTC increased over a semester-long intervention. Pawlak et al. (2016) shows students' baseline WTC increases during certain tasks and then returns to baseline. Much historical research explores WTC's stability, such as MacIntyre's (1994) description of WTC as stable in a study with personality traits. These studies suggest WTC has a state dimension (excitable).

In this study, WTC was not stimulated. A wide range (17.5-100.0) of scores were reported and most participants scored in the normal range (52-82) as established by McCroskey (1992). These findings suggest the stable dimension was measured. Perhaps Astin's (1984) and Mayhew's (2016) reference to students' effort toward involvement is more akin to the state dimension of WTC. Researchers in fields of influence are keenly interested in state variables



because they can be influenced (Woolfolk, 2016). Further research with state WTC could inform student success literature.

***WTC is Associated with Other Indicators of Student Success.*** Findings outside the research questions suggested WTC may associate indirectly with GPA. First, WTC correlated with staff NVI. Richmond and McCroskey (2004) posited those who are willing to engage with others tend to be aware of sources' immediacy. This finding supports WTC as a characteristic aligned with immediacy. Second, a WTC subscale (staff WTC) correlated with FYS grade in sophomores. Because WTC associates with two variables related to GPA (staff NVI and FYS grade), it may exert indirect influence on GPA through one or both variables. This influence was not explored by moderation or mediation analyses because WTC did not associate directly with the outcome variable in this dataset.

### ***Staff Nonverbal Immediacy and Student Success***

Research Question 2 asked, how does staff nonverbal immediacy (NVI) affect early-career grade point average of students enrolled in small residential colleges?

**Staff NVI is Positively Associated with GPA.** Staff NVI affected early-career grade point average of students enrolled in small residential colleges. Bovill and Felten (2016) conceive students who perceive environments as positive tend to perform positively within them. This conclusion suggests student-staff communication aligns with Tinto's (1993) interactionist model. Immediacy with staff as an interactant has not been sufficiently researched in higher education. In previous immediacy research with instructors as source, Furlich (2016) found no relationship between instructor immediacy and student state motivation at a small liberal arts college. This study, set similarly, did not explore instructor immediacy but found significance between staff immediacy and students' early-career GPA.

To understand how students' communication relates to success, it is important to explore interactions with all available groups and consider students may not categorize interactions similarly to researchers (Tinto, 2017b). Students likely recall individuals through meaningful connections, not because of job titles or levels of education. In a case-study format, Felten and Lambert (2020) report on many types of universities and find relationships impact students' educational experience, the effect is ongoing, and it can be widespread to represent a campus or distilled to one person. In this study, students were asked to consider a professional staff person and report on behaviors observed or recalled. While not asked to identify the person, some included notations. To serve students' perspectives with fidelity, researchers should consider many sources of influence. This study inquired about professional staff. Students stretched the boundaries farther to include those "trimming trees" and "serving coffee".

This study occurred during the first full semester of in-person education during a pandemic (a known limitation) and used a reliable instrument to measure staff immediacy. Of 26 items, more than half asked about behaviors potentially blocked by masking and social distancing policies: facial expressions, space between interactants, touch behavior, and voice quality. Even with these barriers, students scored staff as approachable and likable. Importantly, these perceptions related to quantitative achievement. In other semesters, the relationship between staff NVI and performance was not known. Known from extant knowledge is students' interactions with others impacts success. In Fall 2020, the addition of professional staff extended extant knowledge. Staff as an interactant and the context of pandemic restrictions are both novel additions to student success models.

### ***Credit Hour Completion Ratio and Student Success***

A conclusion for the relationship between credit hour completion ratio (CCR) and GPA drew on results from two research questions. Research Question 3, informed by correlation asked, how does CCR affect GPA of early-career students in small college settings? Research Question 5, informed by multiple regression asked, to what extent do independent variables, acting alone or in combination, affect GPA of early-career students in small college settings?

**CCR Positively Influenced GPA.** CCR positively influenced GPA of early-career students in small college settings. This conclusion was developed with CCR's positive association with GPA in all groups. It was finalized when CCR interacted with three other variables to explain 60% of GPA's variance and 20% when analyzed alone. This conclusion places CCR firmly in student success models and provides evidence CCR may impact progression and completion through its relationship with GPA. CCRs collected from one point in time may project future results on performance. This assertion aligns with literature that explains achievement by one measure relates to subsequent progression and continuance (Mayhew et al., 2016). Akos (2020) found continuance rates of first-year students were twice as high for those with CCRs of 80% or above. Most participants in this study ( $n = 313$ ) scored higher than 80% on CCR. Because CCR also influenced GPA, a measure known to predict completion (Mayhew et al., 2016), its contribution to the literature gains value. Still, CCRs over time could have added more meaning to this study. Achievement over time adds momentum to students' experience (Mayhew et al., 2016). The cross-sectional data in this study did not provide a change over time.

### ***Academic Coaching and Student Success***

Conclusions about the relationship between academic coaching and GPA drew on results from two research questions. Research Question 4, informed by correlation asked, how does

academic coaching affect early-career GPA of students enrolled in small residential colleges?

Research Question 5, informed by multiple regression, asked, to what extent do independent variables, alone or in combination, affect early-career GPA of students enrolled in small residential colleges?

**The Relationship Between Academic Coaching and GPA is Inconclusive.** This conclusion was developed when academic coaching associated negatively with GPA in all groups. It was finalized when academic coaching showed no significant association in multiple regression (neither with other variables nor when acting alone). The following results contrast: the most rigorous statistical test used, multiple regression, informed non-significance with 95% confidence; correlation results showed an association with GPA that should not be dismissed.

***Academic Coaching is Negatively Associated with GPA.*** Academic coaching associated negatively with GPA of early-career students in small college settings. This conclusion does not align with literature that shows positive results from coaching in longitudinal studies. As this study was cross-sectional, differences in study design may account for opposing results. Capstick et al. (2019) grouped students with GPAs below 2.0 and showed coached students 20% more likely to raise their GPA to 2.00 or greater in one semester versus uncoached peers. Pechac and Slantcheva-Durst (2019) explored students assigned to coaching as an intervention and showed those who met with a coach three or more times over a semester had higher CCRs than those who met less often or did not meet. In both studies, baseline GPAs were compared to subsequent GPAs over time. This study did not show change over time but confirmed what is known: students with lower GPAs are more likely to participate in academic coaching than those with higher GPAs.

### ***Study Variables and Student Success***

Research question 5 asked, to what extent do WTC, staff NVI, CCR, and academic coaching (alone or in combination) affect early-career grade point average of students enrolled in small residential colleges? WTC was excluded from combined analyses due to unmet criteria during assumptions for multiple regression. Academic coaching was excluded due to its non-significant contribution shown in multiple regression analysis.

**Staff NVI and CCR Together Positively Affect GPA.** Staff NVI and CCR (together) positively affected GPA of early-career students in small college settings. Together, these variables explained a significant 50% of GPA's variance in total students and freshmen. Similarly, in sophomores, 40% of GPA's variance was explained by staff NVI and CCR together. Because staff NVI is sparsely represented in the literature and CCR is represented rather thinly, this relationship is relatively new to the scholarly landscape. This conclusion supports previous conclusions about each variables' relationship with GPA.

### ***Other Results in Student Success***

High school GPA showed a strong relationship with college GPA in all groups observed and was the strongest predictor of GPA in both models. This finding was not elevated to a conclusion because it aligns with decades of research in higher education summarized by Mayhew et al. (2016) that explains high school GPA as a strong predictor of college GPA and aligns with current knowledge that prior academic achievement predicts continued achievement.

**FYS Grade Predicted GPA.** FYS positively predicted GPA of early-career students in small college settings. This conclusion developed when FYS grade associated significantly with GPA for all groups tested and finalized when FYS emerged as a significant predictor in sequential regression. FYS grade acted with three other variables to explain 60% of GPA's

variance, and its individual contribution to the model was significant. At the student level, for every unit increase in FYS grade, GPA increased .24 within this data set.

This conclusion was not related to a research question and unexpected. The researcher conceptualized FYS grade as “just a one-credit class” and underestimated its ability to influence GPA in early-career students. Re-conceptualization provided clarity. Due to host college requirements, FYS participation did not vary among groups of students and was constant. The content in this one-hour course, taught by a variety of staff, was non-academic (N. Livengood, personal conversation, August 14, 2020). Importantly, earned FYS grade provided variance within groups and was a measure nearly all students shared. Guided by Astin (1993) and Kuh (2008), FYS grade reflected student effort and was conceptualized as engagement. This conclusion aligns with student success models that engagement influences success.

In the larger literature, evidence of FYS’s influence on student success is inconclusive (Kahu et al., 2020; Kilgo et al., 2015). The conclusions in this study align with FYS’s positive results. FYS is required at the study college, one credit is earned, and engagement is a stated expectation (N. Livengood, personal conversation, August 14, 2020). The conclusion suggests campus engagement influenced academic achievement and is perhaps explained by these context features of FYS at the host college. Many types of FYS programs exist and each are adaptable to specific contexts or groups (Schmidt & Graziano, 2016; Young, 2020). In programs where some students participate in FYS and others do not, studies often compare participation to non-participation (Kuh et al., 2017). In research limited to large universities, Johnson and Stage (2018) found FYS participation at the institution-level was negatively related to graduation rates. The conclusion of this study differs, uses student-level engagement data, and shows that FYS grade directly influenced achievement.

## **Limitations**

### ***Known Limitations***

This study was conducted with known limitations. Data collected from one college may or may not be generalizable to colleges of similar type. Similarly, research conducted within one existing FYS/FUS program with specific contextual factors may or may not be generalizable to other institutions that employ similar programs. This limitation was mitigated by detailed methods and transparent descriptions of data collection. This study was designed and authored prior to COVID-19 but data collection occurred during the pandemic, a known limitation. The researcher considered this factor could affect subjective variables and results. Awareness of masking and social distancing policies, however, did not prepare her for the experience of their implementation during in-person instruction. Indeed, campus education, life, and work during this time revealed a subset of limitations that could not have been anticipated.

### ***Further Limitations Experienced***

During the semester of study (Fall 2020), virtual instruction was new to the host college; it was first implemented when campus was suddenly closed during Spring 2020 (K. English, personal conversation, December 8, 2020). Students were required to attend classes in-person unless prevented by illness or quarantine. Masks were required at all times except in dorms, and social distancing was enforced. Contact tracings were performed based on students' assigned classroom seat. Based on tracings and/or symptoms, students were assigned rooms for isolation on campus or at a local hotel and quarantined for two weeks at a time. Varsity sports were postponed, then cancelled (Virtual Town Hall Meeting, host college, August 3, 2020; October 25, 2020). Education leaders, practitioners, and parents are concerned about reduced well-being and other negative outcomes that may have resulted from a quick conversion to hybrid from

traditional face-to-face classes during the pandemic (National Academies of Sciences, Engineering, and Medicine [NASEM], 2021). Others opine that higher education is just beginning to see the deleterious effects restrictions had on students, faculty, and staff as individuals and in communion with others, both intragroup and intergroup (Felten & Lambert, 2020).

The researcher witnessed additional classroom/campus conditions when conducting research that appeared to increase anxiety/uncertainty in students/faculty/staff: some employees did not come to campus in Fall 2020; most faculty and staff meetings were virtual; and there was expressed anxiety from students and uncertainty from staff about hybrid classes. These reduced communication conditions may have affected scores on study variables. For example, subjective communication variables could have been influenced by instructors barricaded by screens and shields, masks blocking hearing/understanding/recognizing others, and conflicts caused by protocol breaches. The outcome variable GPA may have been affected when technical issues prevented students from attending class, content was compacted in a shortened semester, and class continuity was interrupted due to students'/instructors' illness/quarantine status. Research visits were rescheduled due to instructor illness/quarantine and number of quarantined students per class. Research was affected by the number of absentees; over 100 students enrolled in FYS/FUS were not recruited (not present). Anxiety/uncertainty was expressed by staff and students on several topics. For example, when/if/how to attend/conduct class virtually, if college would continue, and if varsity sports would resume. The NASEM (2021) notes national concern for social, academic, and mental health consequences of pandemic conditions for students overall and college athletes in particular. For instance, participation in sports correlates with higher self-



esteem and lower depression; suspended athletic seasons can mean loss of identity, zero access to training facilities, and less connection with others (NASEM, 2021).

## **Implications**

### ***Theoretical Implications***

Gudykunst's (1993) anxiety/uncertainty management theory (AUM) was the foundation of this study and aligned with several features including the relationships between variables. This discussion explains how AUM theory was supported by the setting, context, and conclusions of this study. Conclusions also supported theories of constructivism (overarching) and positive communication (emerging) and are discussed.

Gudykunst's (1993) AUM theory includes welcoming and newcomer groups that share goals of reducing and managing anxiety/uncertainty through interpersonal communication; additionally, welcoming group members intentionally assist newcomers. This study explored how interactions with staff relate to students' early-career success at small residential colleges. Professional staff (welcomers) interacted with freshmen and sophomores (newcomers) in this setting and contexts of first year seminars (FYS) and follow-up seminars. AUM theory acknowledges settings and contexts have roles in adjustments (Neuliep, 2016). In this study, methods were designed and conclusions drawn through consideration of contextual factors.

Gudykunst's (1993) AUM theory acknowledges the use of nonverbal immediacy (NVI) by the welcoming group to reduce anxiety/uncertainty in the newcomer group. While the conclusion of a positive relationship between staff NVI and GPA presents staff as a novel interactant (different from faculty) in instructional/interpersonal communication, the process it represents aligns with AUM. Staff NVI operated as an in-group welcoming strategy and based on the positive conclusion, AUM is supported.

Beyond interpersonal strategies, Gudykunst's (1993) AUM theory includes activities designed by institutions to create a welcoming climate and strategies that increase inter-group communication. FYS programs are universally purposed to facilitate students' transition to college (Schmidt & Graziano, 2016). Their creation and implementation align with AUM as a strategy that increases opportunities for relaxed and informal interactions within and between groups (Neuliep, 2016). Welcoming behaviors of campus members likely included friendliness, helpfulness, and inclusiveness. Behaviors like these enhance the adjustment of newcomers to novel environments (Neuliep, 2016; Witte, 1993). FYS grade's association with GPA suggests engagement facilitated by campus members and supports AUM theory. AUM theory also acknowledges newcomers must be active in reducing/managing their own anxiety/uncertainty. Thus, engaging in FYS activities as a newcomer aligns with and supports AUM.

Other theories and models informed the methods and conclusions of this study. Positive communication theory (emerging) supports communication through prosocial and affirming interactions and perceptions of experiences, programs, and relationships (Socha & Beck, 2015). The relationship between GPA and both staff NVI and FYS grade supports positive communication theory. Students' positive perceptions of staff and their involvement in FYS led to achievement. Constructivism (overarching theory) supports meanings made in the minds of interactants (Griffin, 2012). While it is not known what meanings were made, impressions of staff NVI associated with achievement. Constructivism is supported because perceptions in the mind associated with a quantitative outcome (GPA).

### ***Practical Implications***

Conclusions of the study guide implications for current practice and those planned for the future. In this study, conclusions that staff NVI, CCR, and FYS grade associated with early-

career GPA have current implications for administrators, faculty, and staff through knowledge gained. Staff have been included in student success models for decades (Bean, 1980), shown to influence outcomes within multiple departments and programs (Pechac & Slantcheva-Durst, 2019), and identified by students as key components in their success in qualitative inquiries (Deil-Amen, 2011; Fruht, 2015). This research is among emerging studies to show staff immediacy associates with GPA in early career students. Application of this knowledge should empower staff individually, among groups, or within institutions. This perspective may embolden institutions to encourage and/or enhance roles of staff with a deeper understanding of their value as a crucial component of the current or emerging “positive university” (Oades et al., 2011, p. 432).

When evaluating within-college progress, institutions should give more attention to CCR and FYS grade as possible indicators of progress. For example, if administrators notice a change in CCR (which is likely due to policy changes during/after a pandemic), pro-active strategies through support could lead to positive solutions. For instance, patterns of withdrawn and/or failed credits among students could relate to a course, major, or student category like athletes and translate to a common need. Akos (2020) conceptualizes a grade of D as an experience of persistence, F as an experience of failure, but withdrawal as a behavior associated with attrition. Records of student withdrawals could serve as an early alert that engagement is wavering. Midterm evaluation of FYS grades would similarly alert and identify novel subsets of students in need of campus support. Collaboration between FYS instructors and other campus leaders could uncover needs easily addressed or those that require referral to further support.

**Momentum Toward a Positive Institution.** Application of knowledge gained to future endeavors could manifest in a myriad of ways. In higher education, barriers often exist between

faculty, students, and/or staff (Felten et al, 2019). Institutions should find ways to increase staff's involvement with students and penetrate real and/or perceived barriers (Felten & Lambert, 2020). Inspiration could come from projects other institutions have implemented to increase positive communication/learning: including staff in projects like research, communities of practice, and students-as-partners initiatives (Felten et al., 2019). Because multiple relationships influence success, Felten and Lambert (2020) envision a network of overlapping relationships or a web of interactions (students with faculty, peers, and staff) for each student, fulfilling a role similar to mentors, toward a relationship-rich education. Felten and Lambert emphasize this connected support increases self-efficacy and sense of belonging. The NASEM (2021) confirms campus-wide support networks associate with academic success.

Because FYS programs are common on campuses, vary in type, and are flexible, leaders could decide to adjust FYS's audience, delivery, and/or credit offered (Young, 2020). Tinto (2017a) supports re-refreshing existing programs with new energy and ideas. The NASEM (2021) notes some FYS programs have successfully tailored FYS activities and/or programs to groups of students and offers an example of a re-design: first-generation students connected with off-campus community members who are first in their family to hold a college degree. The FYS curriculum was modified to accommodate community collaboration activities.

### ***Strengths and Weaknesses of Study***

**Strengths.** Administration of this study followed methods common in instructional communication, in particular Myers et al. (2014), and was a strength of this study. Myers et al. instructed students to consider their previous professor's NVI. Myers et al.'s methods took perception out of study classrooms and extended it to many classrooms across campus. From a few study rooms, participants ( $n = 286$ ) yielded NVI reports on 281 unique instructors across 39

disciplines. Similarly, from 32 FYS/FUS classrooms, this study asked participants to consider one professional staff (outside of class) and yielded 362 impressions of staff immediacy. Results spoke not to one type of staff or department, but to the campus overall. While number of unique individuals perceived is unknown, it likely represents a wide range (Myers et al., 2014).

The helpfulness and flexibility of FYS/FUS directors and instructors was a strength of this study. Directors became interested in the study through several conversations and email exchanges, were provided written explanations of the study's purpose and method, and contributed to a presentation created for instructors. With directors' sponsorship, all but two instructors agreed. Because FYS was linked with an academic class, there were 51 total instructors willing to accommodate recruitment. This collaboration allowed visits to all FYS and FUS sections and enabled a strong response rate (95%). Because instructors allowed time and space to complete materials (and many of them verbally encouraged participation), nearly all students present and recruited agreed to participate.

**Weaknesses.** Known and experienced limitations explained weaknesses of this study, but others were present. While GPA in college is a standard predictor for completion (Mayhew et al., 2016), 72% percent of scores represented one semester of college. Cross-sectional data collected was also a weakness of this study. Student success is a longitudinal process that occurs over semesters and years. This study may have delivered more impactful results if a time frame had been observed. Two measures were subjective (WTC and staff NVI), reported by students and measured by instruments (WTC scale and NIS-O). In correlation studies, self-report measures introduce threats to internal validity. While this weakness was mitigated through established instruments, field tests, reliability tests within the study, and administration over a wide variety of classrooms, days, and times, it cannot be completely diffused (Mitchell, 1985).

Method weaknesses were not the only drawbacks of this study. Other weaknesses lie in the available population and the role of the researcher. Results did not represent a diverse sample by race and was 86.4% white. Projections for the national Fall 2020 cohort is 52.2% white. At the host college the previous academic year (2019-2020), the full cohort was 77% white. In open-answer format, students were asked with which race they identified and reported answers showed six categories. All non-white categories were under-represented in this study.

As an employee of the host college who interacts regularly with students, the researcher could be biased toward results. Past experience in the medical field as an allied professional informed a stance that patient-staff communication may influence health outcomes (Deiorio et al., 2016; Dempsey, 2018). Similarly, recent experience as a distance education student reinforced the position that immediacy in mediated environments can impact learning (Dixson et al., 2017; Garrison et al., 2000). Finally, current experience in student support fortified this position on immediacy. Students' success impacted by immediacy is witnessed regularly, but student-staff relationships are not plentiful in literature. These factors fueled interest in the topic which led to this research project. Advisement, member-checking, and self-reflection led to the careful conclusion that this perspective does not represent a conflict of interest in this research.

### **Recommendations for Further Research**

This study reviewed literature from three broad areas: student success, communication in higher education, and positive communication/education. In each area, this study responded to gaps, analyzed findings, and drew conclusions that add to current knowledge. Subsequent research should continue to respond.

Based on conclusions of this study, further exploration of CCR is recommended in student success inquiries. Quantitative studies could yield more insight into CCR as a variable

and how it relates to other outcomes in student success. Qualitative inquiries with CCR could explore the lived experience of students whose CCR is less than 1.00. This exploration would inform student success as encouraged by Akos (2020) and supported by this study. Professional staff's contribution to student success should continue to be explored in models with different variables, a variety of settings, and in multi-site studies.

Based on conclusions drawn from this study, recommendations for further research in communication deal with out-of-class communication and immediacy. Myers and Martin (2018) and Sellnow et al. (2015) called for communication research beyond student-instructor dyads in the classroom. This study explored student-staff communication (outside of class), and showed these interactions associated with success. Further explorations could extend student-staff research or explore additional dyadic relationships outside of class like student-advisor and/or student-tutor.

Furlich (2016) identified a void in immediacy research for undergraduates who do not attend large universities. This study addressed but did not fully satisfy the setting gap by observing immediacy at a small residential college and providing conclusions toward this void. Extending this research to other size and types of colleges/universities or conducting multi-site studies would add to knowledge about student success. Furlich's call for immediacy research did not include large universities. Conversely, results here support further research of staff immediacy in colleges of any type as the student-staff dyad is under-explored in all higher education settings.

Based on conclusions of this study, positive communication/education research should continue within FYS programs. Because FYS programs vary in type and implementation, further research in a variety of iterations could inform the larger FYS community. This study showed

perceptions of staff across campus associated with student success, which has similarities with campus climate/immediacy studies, called for and conceptualized by Sellnow et al. (2017), to investigate student-institution relationships as similar to interpersonal. Further exploration of this relationship could inform scholars about campus climate, commitment, and students' perceptions of these concepts.

Positive communication/education researchers interested in professional staff as interactants are presented with many options for future projects. While results of this study showed students' perceptions of staff NVI (relational variable) associated with success, other scholars posit the void with staff as interactants is more expansive and exists in higher education literature overall (Graham, 2010; Roberts, 2018; Szekeres, 2011). Similar to this study, gaps in staff communication could be further addressed using rhetorical, relational, perception variables, and/or some combination, established by instructional communication, adapted to staff, and their relationship to student success explored.

### **Conclusion of Study**

College completion in higher education remains a serious concern in the United States. To address a precursor to completion, this quantitative study focuses on early-career success within college. The problem of this study was to examine settings beyond large research universities and determine how interactions with staff relate to early-career student success. This non-experimental study explores student-staff communication through extension of student-instructor research methods described by Myers et al. (2014) and encouraged by Richmond et al. (2003). This study addresses voids in categories identified as setting (small residential colleges) and interactant (professional staff).



Conclusions from this study add to existing scholarship that shows students' interactions with others influence success. Specifically, students' perceptions of staff significantly associate with early-career success, as measured by GPA. Further, conclusions add to limited communication research conducted in settings other than large universities (Furlich, 2016). In an unexpected but notable finding, first year experience (FYS) grade predicts GPA.

This study extends scholarship that shows, in early stages of college, students' interactions with others may influence performance and intentional support from others can impact progression. Implications support the anxiety/uncertainty management (AUM) theory of interpersonal communication (Gudykunst, 1993) and extend Tinto's (1993) interactionist model of student success. Roles of professional staff, supportive contexts, and out-of-class communication are emphasized.

Continued research of student-staff interactions in a variety of settings could continue to inform interpersonal/positive communication and student success literature. Based on their unique contexts, institutions should find ways to embolden campus members, enhance current practices, and encourage impactful student interactions that could enrich experiences and influence success in college. Overall, this study contributes to both interactant and setting gaps identified and adds to scholarly knowledge that addresses the larger concern of college completion in the United States.

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## APPENDIX A- WTC Scale, Scoring, and Norms (Original)

**Directions:** Below are 20 situations in which a person might choose to communicate or not to communicate. Presume you have completely free choice. Indicate the percentage of times you would choose to communicate in each type of situation. Indicate in the space at the left of the item what percent of the time you would choose to communicate. (0 = Never to 100 = Always)

- \_\_\_\_\_ 1. \*Talk with a service station attendant.
- \_\_\_\_\_ 2. \*Talk with a physician.
- \_\_\_\_\_ 3. Present a talk to a group of strangers.
- \_\_\_\_\_ 4. Talk with an acquaintance while standing in line.
- \_\_\_\_\_ 5. \*Talk with a salesperson in a store.
- \_\_\_\_\_ 6. Talk in a large meeting of friends.
- \_\_\_\_\_ 7. \*Talk with a police officer.
- \_\_\_\_\_ 8. Talk in a small group of strangers.
- \_\_\_\_\_ 9. Talk with a friend while standing in line.
- \_\_\_\_\_ 10. \*Talk with a waiter/waitress in a restaurant.
- \_\_\_\_\_ 11. Talk in a large meeting of acquaintances.
- \_\_\_\_\_ 12. Talk with a stranger while standing in line.
- \_\_\_\_\_ 13. \*Talk with a secretary.
- \_\_\_\_\_ 14. Present a talk to a group of friends.
- \_\_\_\_\_ 15. Talk in a small group of acquaintances.
- \_\_\_\_\_ 16. \*Talk with a garbage collector.
- \_\_\_\_\_ 17. Talk in a large meeting of strangers.
- \_\_\_\_\_ 18. \*Talk with a spouse (or girl/boyfriend).
- \_\_\_\_\_ 19. Talk in a small group of friends.
- \_\_\_\_\_ 20. Present a talk to a group of acquaintances.

**Scoring:** Add scores from these items:

3, 4, 6, 8, 9, 11, 12, 14, 15, 17, 19, and 20.

Divide the total by 12.

Result \_\_\_\_\_

\*denotes original distractors

**Norms:** Resulting scores for total WTC greater than 82 → HIGH

Resulting scores for total WTC between 52-82 → AVERAGE

Resulting scores for total WTC less than 52 → LOW

### Reference

McCroskey, J. C. (2007). Webpage. Communication research measures. WTC Scale.  
<http://www.jamescmccroskey.com/measures/WTC.html>

## APPENDIX B- WTC Scale (Field Test Version)

Student ID \_\_\_\_\_

### Willingness to Communicate Scale

#### Directions:

- Below are 20 situations in which a person might choose to communicate or not to communicate.
- Presume you have free choice in these situations.
- Indicate the percentage of times you would choose to communicate in each type of situation.
- In the blank to the left of each item, write what percent of the time you would choose to communicate.

**0 = Never      100 = Always**

- \_\_\_\_\_ 1. Talk with an adult on campus while standing in line.
- \_\_\_\_\_ 2. Present in a student meeting led by an adult.
- \_\_\_\_\_ 3. Present a talk to a group of strangers.
- \_\_\_\_\_ 4. Talk with an acquaintance while standing in line.
- \_\_\_\_\_ 5. Present with other adults to the campus community.
- \_\_\_\_\_ 6. Talk in a large meeting of friends.
- \_\_\_\_\_ 7. Talk in a new group led by a campus adult.
- \_\_\_\_\_ 8. Talk in a small group of strangers.
- \_\_\_\_\_ 9. Talk with a friend while standing in line.
- \_\_\_\_\_ 10. Talk with an adult on campus in their office.
- \_\_\_\_\_ 11. Talk in a large meeting of acquaintances.
- \_\_\_\_\_ 12. Talk with a stranger while standing in line.
- \_\_\_\_\_ 13. Talk in an established group led by a campus adult.
- \_\_\_\_\_ 14. Present a talk to a group of friends.
- \_\_\_\_\_ 15. Talk in a small group of acquaintances.
- \_\_\_\_\_ 16. Present in a meeting of campus adults.
- \_\_\_\_\_ 17. Talk in a large meeting of strangers.
- \_\_\_\_\_ 18. Present in a student meeting led by an adult.
- \_\_\_\_\_ 19. Talk in a small group of friends.
- \_\_\_\_\_ 20. Present a talk to a group of acquaintances.

#### Reference

McCroskey, J. C. (2007). Webpage. Communication research measures. WTC Scale.  
<http://www.jamescmccroskey.com/measures/WTC.htm>

## APPENDIX C- WTC Scale (Study Version)

### WTC SCALE

#### Willingness to Communicate Scale

##### Directions:

- Below are 20 situations in which a person might choose to communicate or not to communicate.
- Presume you have free choice in these situations.
- Indicate the percentage of times you would choose to communicate in each type of situation.
- In the blank to the left of each item, write what percent of the time you would choose to communicate.

**0 = Never      100 = Always**

- \_\_\_\_\_ 1. Talk with an adult on campus while standing in line.
- \_\_\_\_\_ 2. Present in a student meeting led by an adult.
- \_\_\_\_\_ 3. Present a talk to a group of strangers.
- \_\_\_\_\_ 4. Talk with an acquaintance while standing in line.
- \_\_\_\_\_ 5. Present with other adults to the campus community.
- \_\_\_\_\_ 6. Talk in a large meeting of friends.
- \_\_\_\_\_ 7. Talk in a new group led by a campus adult.
- \_\_\_\_\_ 8. Talk in a small group of strangers.
- \_\_\_\_\_ 9. Talk with a friend while standing in line.
- \_\_\_\_\_ 10. Talk with an adult on campus in their office.
- \_\_\_\_\_ 11. Talk in a large meeting of acquaintances.
- \_\_\_\_\_ 12. Talk with a stranger while standing in line.
- \_\_\_\_\_ 13. Talk in an established group led by a campus adult.
- \_\_\_\_\_ 14. Present a talk to a group of friends.
- \_\_\_\_\_ 15. Talk in a small group of acquaintances.
- \_\_\_\_\_ 16. Present in a meeting of campus adults.
- \_\_\_\_\_ 17. Talk in a large meeting of strangers.
- \_\_\_\_\_ 18. Present in a student meeting led by an adult.
- \_\_\_\_\_ 19. Talk in a small group of friends.
- \_\_\_\_\_ 20. Present a talk to a group of acquaintances.

#### Reference

McCroskey, J. C. (2007). Webpage. Communication research measures. WTC Scale.  
<http://www.jamescmccroskey.com/measures/WTC.htm>

**APPENDIX D- WTC Items and Exploratory Subscale (WTC Staff)**  
**By Context- and Receiver-type**  
**(original & scored, created & unscored, original & removed)**

Item	Context-type				Receiver-type			
<i>Scored items:</i>	Friend	Acq	Stranger	Adult	dyad	group	meeting	public
Present a talk to a group of strangers			•					•
Talk with an acquaintance while standing in line		•			•			
Talk in a large meeting of friends	•						•	
Talk in a small group of strangers			•			•		
Talk with a friend while standing in line	•				•			
Talk in a large meeting of acquaintances		•					•	
Talk with a stranger while standing in line			•		•			
Present a talk to a group of friends	•							•
Talk in a small group of acquaintances		•				•		
Talk in a large meeting of strangers			•				•	
Talk in a small group of friends	•					•		
Present a talk to a group of acquaintances.		•						•
<i>Staff WTC scale (unscored items)</i>								
Talk with an adult on campus while standing in line				•	•			
Talk with an adult on campus in their office				•	•			
Talk in a new group led by a campus adult				•		•		
Talk in an established group led by a campus adult				•		•		
Present in a meeting of campus adults				•			•	
Present in a student meeting led by an adult				•			•	
Present a speech to all campus faculty and staff				•				•
Present with other adults to the campus community				•				•
<i>Distractor items removed:</i>								
Talk with a garbage collector			•		•			
Talk with a salesman in a store			•		•			
Talk with a waiter/waitress			•		•			
Talk with a secretary			•		•			
Talk with a police officer			•		•			
Talk with a spouse (or boyfriend/girlfriend)	•				•			
Talk with a physician			•		•			
Talk with a service station attendant			•		•			



## APPENDIX E- Scales' Permission

### Screenshot of McCroskey's (2007) Sharing Policy for Communication Research Measures

“These are measures that have been developed by researchers who are, or at one time were, faculty members or graduate students at West Virginia University. They were developed for use by researchers and may be used for research or instructional purposes with no individualized permission. There is no cost for this use. Please cite the source(s) noted at the bottom of the measure when publishing articles based on research using these instruments”.

**COMMUNICATION RESEARCH MEASURES**

These are measures that have been developed by researchers who are, or at one time were, faculty members or graduate students at West Virginia University. They were developed for use by researchers and may be used for research or instructional purposes with no individualized permission. There is no cost for this use. Please cite the source(s) noted at the bottom of the measure when publishing articles based on research using these instruments.

- [Affective Learning](#)
- [Attitude, Generalized](#)
- [Attraction, Interpersonal](#)
- [Belief, Generalized](#)
- [Classroom Anxiety](#)
- [Communication Competence \(SPCC\)](#)
- [Compulsive Communication, Talkaholic Scale](#)
- [Environment](#)
- [Ethnocentrism](#)
- [Evaluation Apprehension](#)
- [Fear of Physician \(FOP\)](#)
- [Homophily Scales](#)
- [Humor Assessment \(RHA\)](#)
- [Image Fixation](#)
- [Innovativeness, Individual \(II\)](#)
- [Innovativeness, Organizational \(PORGI\)](#)
- [Introversion](#)
- [Nonverbal Immediacy Scale - Observer Report \(NIS-O\)](#)
- [Nonverbal Immediacy Scale - Self Report \(NIS-S\)](#)
- [Nonverbal Immediacy-Short Form \(SRNI\)](#)
- [Organizational Orientations](#)
- [Perceived Quality of Medical Care \(POMC\)](#)
- [Personal Report of Communication Apprehension \(PRCA-24\)](#)
- [Personal Report of Interethnic Communication Apprehension \(PRECA\)](#)
- [Personal Report of Intercultural Communication Apprehension \(PRICA\)](#)
- [Personal Report of Public Speaking Anxiety \(PRPSA\)](#)
- [Power Measures](#)
- [Satisfaction with Physician \(SWP\)](#)
- [Shyness](#)
- [Singing Apprehension \(TOSA\)](#)
- [Situational CA Measure \(SCAM\)](#)
- [Sociocommunicative Orientation \(SCO\)](#)
- [Sociocommunicative Style \(SCS\)](#)
- [Source Credibility](#)
- [Teacher Apprehension](#)
- [Teacher Burnout](#)

McCroskey, J. C. (2007). Webpage. Communication research measures. WTC Scale.  
<http://www.jamescmccroskey.com/measures/WTC.htm>

## APPENDIX F- NIS-O (Original)

**Directions:** The following statements describe the ways some people behave while talking with or to others. Please indicate in the space at the left of each item the degree to which you believe the statement applies to (fill in the target person's description).

Please use the following 5-point scale:

1 = Never; 2 = Rarely; 3 = Occasionally; 4 = Often; 5 = Very Often

- \_\_\_\_\_ 1. He/she uses her/his hands and arms to gesture while talking to people.
- \_\_\_\_\_ 2. He/she touches others on the shoulder or arm while talking to them.
- \_\_\_\_\_ 3. He/she uses a monotone or dull voice while talking to people.
- \_\_\_\_\_ 4. He/she looks over or away from others while talking to them.
- \_\_\_\_\_ 5. He/she moves away from others when they touch her/him while they are talking.
- \_\_\_\_\_ 6. He/she has a relaxed body position when he/she talks to people.
- \_\_\_\_\_ 7. He/she frowns while talking to people.
- \_\_\_\_\_ 8. He/she avoids eye contact while talking to people.
- \_\_\_\_\_ 9. He/she has a tense body position while talking to people.
- \_\_\_\_\_ 10. He/she sits close or stands close to people while talking with them.
- \_\_\_\_\_ 11. Her/his voice is monotonous or dull when he/she talks to people.
- \_\_\_\_\_ 12. He/she uses a variety of vocal expressions when he/she talks to people.
- \_\_\_\_\_ 13. He/she gestures when he/she talks to people.
- \_\_\_\_\_ 14. He/she is animated when he/she talk to people.
- \_\_\_\_\_ 15. He/she has a bland facial expression when he/she talks to people.
- \_\_\_\_\_ 16. He/she moves closer to people when he/she talks to them.
- \_\_\_\_\_ 17. He/she looks directly at people while talking to them.
- \_\_\_\_\_ 18. He/she is stiff when he/she talks to people.
- \_\_\_\_\_ 19. He/she has a lot of vocal variety when he/she talks to people.
- \_\_\_\_\_ 20. He/she avoids gesturing while he/she is talking to people.
- \_\_\_\_\_ 21. He/she leans toward people when he/she talks to them.
- \_\_\_\_\_ 22. He/she maintains eye contact with people when he/she talks to them.
- \_\_\_\_\_ 23. He/she tries not to sit or stand close to people when he/she talks with them.
- \_\_\_\_\_ 24. He/she leans away from people when he/she talks to them.
- \_\_\_\_\_ 25. He/she smiles when he/she talks to people.
- \_\_\_\_\_ 26. He/she avoids touching people when he/she talks to them.

**Scoring: Step 1.** Add the scores from the following items:

1, 2, 6, 10, 12, 13, 14, 16, 17, 19, 21, 22, and 25.

**Step 2.** Add the scores from the following items:

3, 4, 5, 7, 8, 9, 11, 15, 18, 20, 23, 24, and 26.

**Total Score** = 78 plus Step 1 minus Step 2.

**Norms:** Females      Mean = 96.7    S.D. = 16.1    High = >112 Low = <81  
 Males              Mean = 91.6    S.D. = 15.0    High = >106 Low = <77  
 Combined        Mean = 94.2    S.D. = 15.6    High = >109 Low = <79  
 (score differences between genders are not statistically significant).

## APPENDIX G- NIS-O (Study Version)

### Revised Nonverbal Immediacy Scale- Observer Report (NIS-O)

**Directions:** The following statements describe the ways some people behave while talking with or to others. Please indicate in the space at the left of each item the degree to which you believe the statement applies to professional staff at this college. Consider a staff member you have observed in communication with your or others on campus but outside of this classroom.

**Please use the following 5-point scale: 1 = Never; 2 = Rarely; 3 = Occasionally; 4 = Often; 5 = Very Often**  
**The staff member I am considering....**

- \_\_\_\_\_ 1. uses her/his hands and arms to gesture while talking to people.
- \_\_\_\_\_ 2. touches others on the shoulder or arm while talking to them.
- \_\_\_\_\_ 3. uses a monotone or dull voice while talking to people.
- \_\_\_\_\_ 4. looks over or away from others while talking to them.
- \_\_\_\_\_ 5. moves away when they touch others while they are talking.
- \_\_\_\_\_ 6. has a relaxed body position when he/she talks to people.
- \_\_\_\_\_ 7. frowns while talking to people.
- \_\_\_\_\_ 8. avoids eye contact while talking to people.
- \_\_\_\_\_ 9. has a tense body position while talking to people.
- \_\_\_\_\_ 10. sits close or stands close to people while talking with them.
- \_\_\_\_\_ 11. voice is monotonous or dull when they talk to people.
- \_\_\_\_\_ 12. uses a variety of vocal expressions when they talk to people.
- \_\_\_\_\_ 13. gestures when they talk to people.
- \_\_\_\_\_ 14. is animated when they talk to people.
- \_\_\_\_\_ 15. has a bland facial expression when they talk to people.
- \_\_\_\_\_ 16. moves closer to people when they talk to them.
- \_\_\_\_\_ 17. looks directly at people while talking to them.
- \_\_\_\_\_ 18. is stiff when talking to people.
- \_\_\_\_\_ 19. has a lot of vocal variety when talking to people.
- \_\_\_\_\_ 20. avoids gesturing while talking to people.
- \_\_\_\_\_ 21. leans toward people when talking to them.
- \_\_\_\_\_ 22. maintains eye contact with people when talking to them.
- \_\_\_\_\_ 23. tries not to sit or stand close to people when talking with them.
- \_\_\_\_\_ 24. leans away from people when talking to them.
- \_\_\_\_\_ 25. smiles when talking to people.
- \_\_\_\_\_ 26. avoids touching people when talking.

Richmond, V. P., McCroskey, J. C., & Johnson, A. D. (2003). Development of the nonverbal immediacy scale (NIS): Measures of self- and other-perceived nonverbal immediacy. *Communication Quarterly*, 51(4), 504–517.  
<https://doi.org/10.1080/01463370309370170>

## APPENDIX H- Human Subjects Approval Letter (Host College)

### How Communication Variables and Academic Coaching Influence Student Success at a Small Liberal Arts College



DATE: September 3, 2020

Re: HSC Protocol #: 08252020: How Communication Variables and Academic Coaching Influence Student Success at a Small Liberal Arts College

To Donna Fenton:

The Marietta College HSC has granted approval for your proposed research. The project has approval for one calendar year from today's date as noted on this letter.

If you need to submit any further correspondence regarding this proposal, please include the assigned HSC protocol number.

Best of luck with your project.

Sincerely,

Interim Chair, Human Subjects Committee

## APPENDIX I- Human Subjects Approval Letter (ODU)



### OFFICE OF THE VICE PRESIDENT FOR RESEARCH



#### Physical Address

4111 Monarch Way, Suite 203  
Norfolk, Virginia 23508

#### Mailing Address

Office of Research  
1 Old Dominion University  
Norfolk, Virginia 23529  
Phone(757) 683-3460  
Fax(757) 683-5902

DATE: September 24, 2020

TO: Philip Reed

FROM: Old Dominion University Education Human Subjects Review Committee

PROJECT TITLE: [1656457-1] How Communication Variables and Academic Coaching Influence Student Success at a Small Liberal Arts College

REFERENCE #:

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE:

REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of New Project materials for this project. The Old Dominion University Education Human Subjects Review Committee has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact Laura Chezan at (757) 683-7055 or lchezan@odu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Old Dominion University Education Human Subjects Review Committee's records.

## APPENDIX J- Informed Consent

(anonymized)

### How Communication Variables and Academic Coaching Influence Student Success at a Small Liberal Arts College

**Dear Participant:**

You are being asked to participate in dissertation research conducted at Marietta College (MC). The researchers are:

**Principal Investigator:** Philip A. Reed, PhD  
Darden College of Education, Old Dominion University  
E-mail: [preed@odu.edu](mailto:preed@odu.edu)

**On-site researcher:** Donna L. Fenton  
Old Dominion University, doctoral candidate  
E-mails: [df002@marietta.edu](mailto:df002@marietta.edu) and [dfent001@odu.edu](mailto:dfent001@odu.edu)  
Phone:

**Purpose of this consent:**

- to inform you about this project
- to convey to you that participation is voluntary
- to explain potential risks and benefits of participation
- to empower you to make an informed decision about participation
- to record the consent of those who say YES.

Please note that if you are under 18 years old, you are **not** able to take part in this project.

**Project title: How Communication Variables and Academic Coaching Influence Student Success at a Small Liberal Arts College**

**Purpose of project:**

As a                      or                      student, you are being asked to participate in a research project that explores how students' communication, perceptions of others, and participation in supportive activities influence their progression through college. Approximately 450 MC students are being asked to participate in this research. Your participation will contribute to the knowledge of both student success and communication in higher education. This research project has been approved by both the Human Subjects Committee (HSC) and the HSC of Old Dominion University.

**Procedures involving your participation:**

- You will be asked to complete two communication instruments and one survey.
  - Willingness to Communicate instrument- this self-report 20-item instrument measures your tendency to initiate communication (talking) in different situations.
  - Nonverbal Immediacy Scale for Observers- this 26-item Likert-type scale asks you to report your perceptions of how a campus member communicates.
  - Staff Department List and Survey- this 19-item survey lists staff departments at MC and asks you to mark one answer about your experience for each department.
- Estimated time to complete all items is 15 minutes in one sitting.
- Participation involves completing all items during regular class time on one day.

- Your participation in this project is completely voluntary.
- It is acceptable for you to say “no”.
- Even if you say “yes” now, it is acceptable to say “no” later.
- You may choose to answer some questions and not others.
- You may change your mind at any time and withdraw as a participant from this project with no negative consequences.

**Risks and Benefits:**

- Confidentiality of all participants will be protected.
- Responses will be aggregated with other students; individual cases will not be researched.
- Links to your name will be removed.
- Responses will not be linked to other directly identifiable information.
- Marietta College will be anonymized for written descriptions of this research
- As with any research, participants may be subject to risks that have not yet been identified.
- If you say “yes” to participation, your consent in this document does not waive your legal rights.
- You will not receive compensation for participation in this project.
- There are no direct benefits for participation in the project.

**Contact Information for Questions/Concerns:**

If you have any questions about your participation in this project, the researchers listed above (p. 1) are your primary resources.

If you have questions or concerns about your role and rights as a research participant, you may contact Human Subjects Committee Chairperson at

If you would like to obtain or offer information or register a complaint about this project, you may contact: Philip Reed, PhD, Principal Investigator at [preed@odu.edu](mailto:preed@odu.edu).

**Voluntary Consent:**

By signing this form, you are saying several things:

- you have read this form or have had it read to you.
- you understand this form, your participation in this project, and its risks and benefits.
- the researcher has answered any questions you had about the research.

By signing below, you are saying, “yes, I agree to participate in this project”.

Participant’s Printed Name: \_\_\_\_\_

Participant’s Signature: \_\_\_\_\_

Date: \_\_\_\_\_

If you would like a copy of this signed form for your records, the researcher will scan and email you a copy.

To indicate you request a copy of this informed consent, please mark yes below.

☐ YES

☐ NO

## APPENDIX K- Contextual Questionnaire

### Staff Department List and Survey

Below are departments on campus where staff employees work.

Consider the departments as a whole, your experience, and your impressions.

For each department, indicate the response that most closely describes your perceptions.

	Helpful and/or supportive	Unhelpful and/or not friendly	I have little/no experience with this department
<b>Department</b>			
Admission Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Athletic Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic Resource Center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Auxiliary Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Campus Involvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career Center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community Living	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disability Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diversity & Inclusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education Abroad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Aid Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health & Wellness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information Technology (IT) Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical Plant, Maintenance, & Grounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Records Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tutoring & Learning Center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing Center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



**APPENDIX L- Demographic Sheet****Demographic Information**

**Name:** \_\_\_\_\_

**Year of birth:** \_\_\_\_\_

**Month of birth:** \_\_\_\_\_

**Gender:**

- ☐ female
- ☐ male
- ☐ other
- ☐ prefer not to answer
- ☐ transgender

**Race :** \_\_\_\_\_

**Do you live on campus?**

- ☐ yes
- ☐ no

**Are you a college athlete?**

☐ yes      \*if yes, what sport? \_\_\_\_\_

☐ no

**Did either of your parents earn a 4-year college degree?**

- ☐ yes
- ☐ no
- ☐ not sure

**Do you have a job (work-study) on campus this semester?**

- ☐ yes      \* If yes, what department(s) \_\_\_\_\_
- ☐ no

**Please list any student organizations you belong to:**

### APPENDIX M- Data Collection Timeline (FUS)

#### Follow-Up Seminar Data Collection for Sophomores Nine Sections anonymized A-I.

Semester Week	Monday	Tuesday	Wednesday	Thursday	Friday
SEVEN		29-Sep		1-Oct	2
		Group A- 7 pm		Group B- 1 pm	Group C- 11 am
EIGHT	5	6	7	8	9
	Group D- 10 am	Group E- 9:30 am	Group F- 2:30 pm	Group G- 10:30 Group H- 12 pm	
NINE	12	13	14	15	16
TEN	19	20	21	22	23
			Group I- 11 am		

### APPENDIX N- Data Collection Timeline (FYS)

First-Year Seminar Data Collection for Freshman  
22 Sections anonymized A-V.

Semester Week	Monday	Wednesday	Friday
<b>EIGHT</b>	<b>5-Oct</b>	<b>7</b>	<b>9</b>
2-cr -FR	Section/Time	Section/Time	Section/Time
1-cr -Fr	A/11:00	B/11:00 C/11:35	D/11:15 E/11:35
<b>NINE</b>	<b>12</b>	<b>14</b>	<b>16</b>
	Section/Time	Section/Time	Section/Time
	F/11:35	G/11:00	H/11:00 I/11:15 J/11:35
<b>TEN</b>	<b>19</b>	<b>21</b>	<b>23</b>
	Section/Time	Section/Time	Section/Time
	K/11:35	L/11:00	
<b>ELEVEN</b>	<b>26</b>	<b>28</b>	<b>30</b>
	Section/Time	Section/Time	Section/Time
	M/11:00	N/11:35	
<b>TWELVE</b>	<b>2-Nov</b>	<b>4</b>	<b>6</b>
	Section/Time	Section/Time	Section/Time
	O/11:35	P/11:20	
<b>THIRTEEN</b>	<b>9</b>	<b>11</b>	<b>13</b>
	Section/Time	Section/Time	Section/Time
	R/11:35		T/11:00 U/11:35
<b>FOURTEEN</b>	<b>16</b>		
	Section/Time		
	V/11:00		

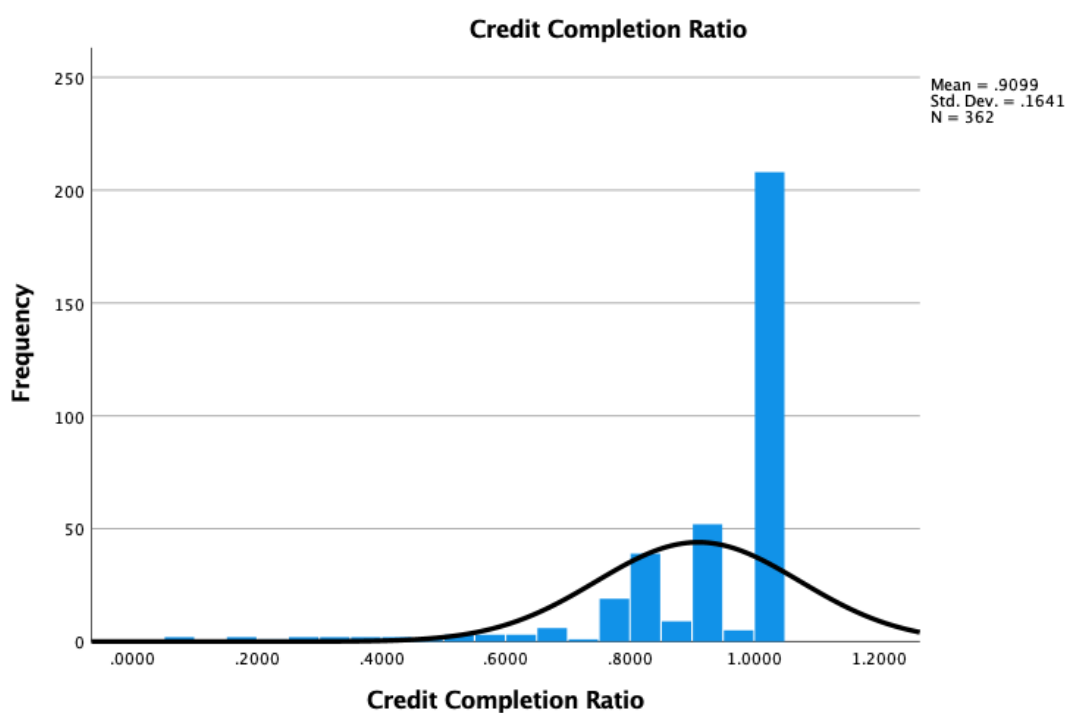
## APPENDIX O- Data Transformation Rationale and Results

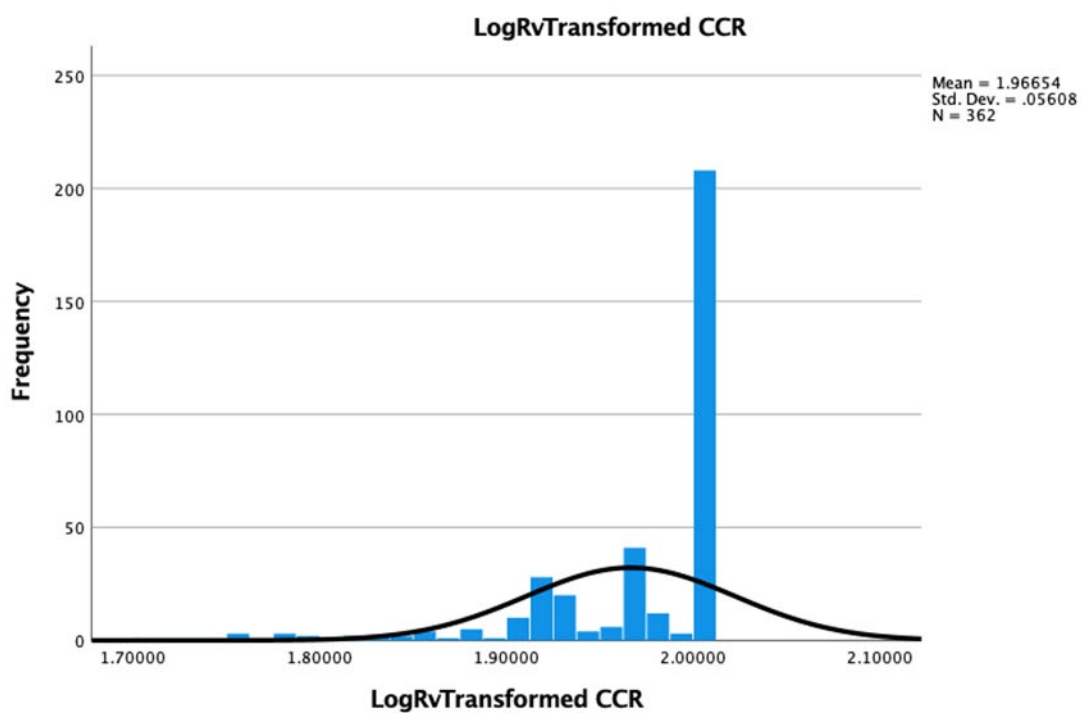
### Variable Output and Transformation Decisions

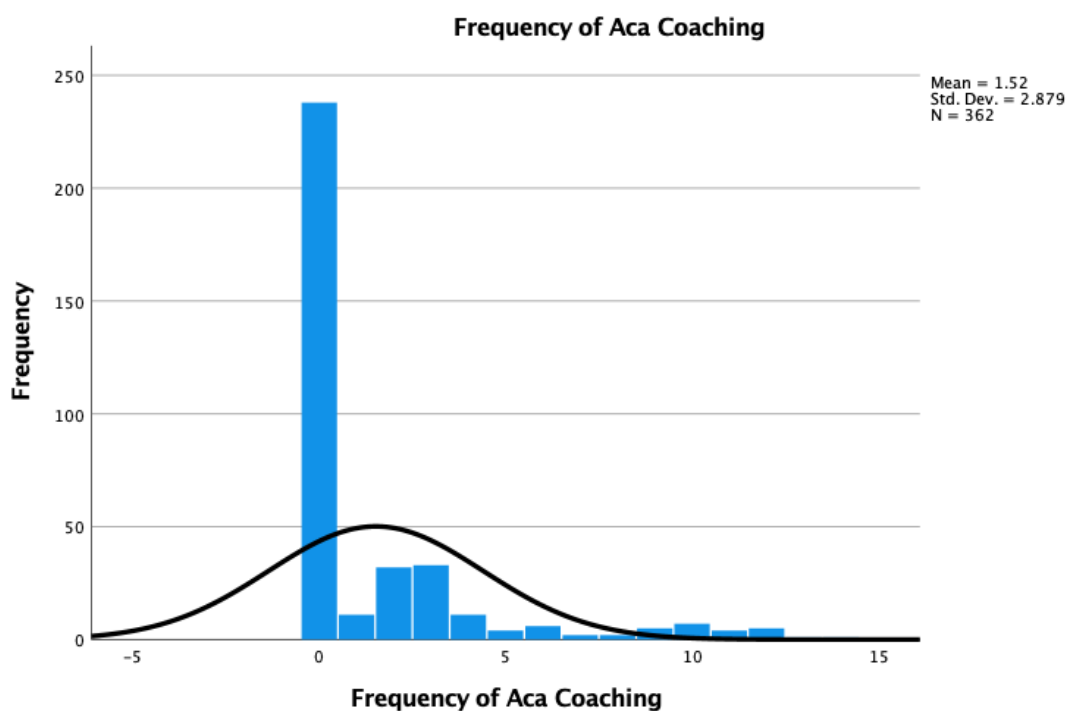
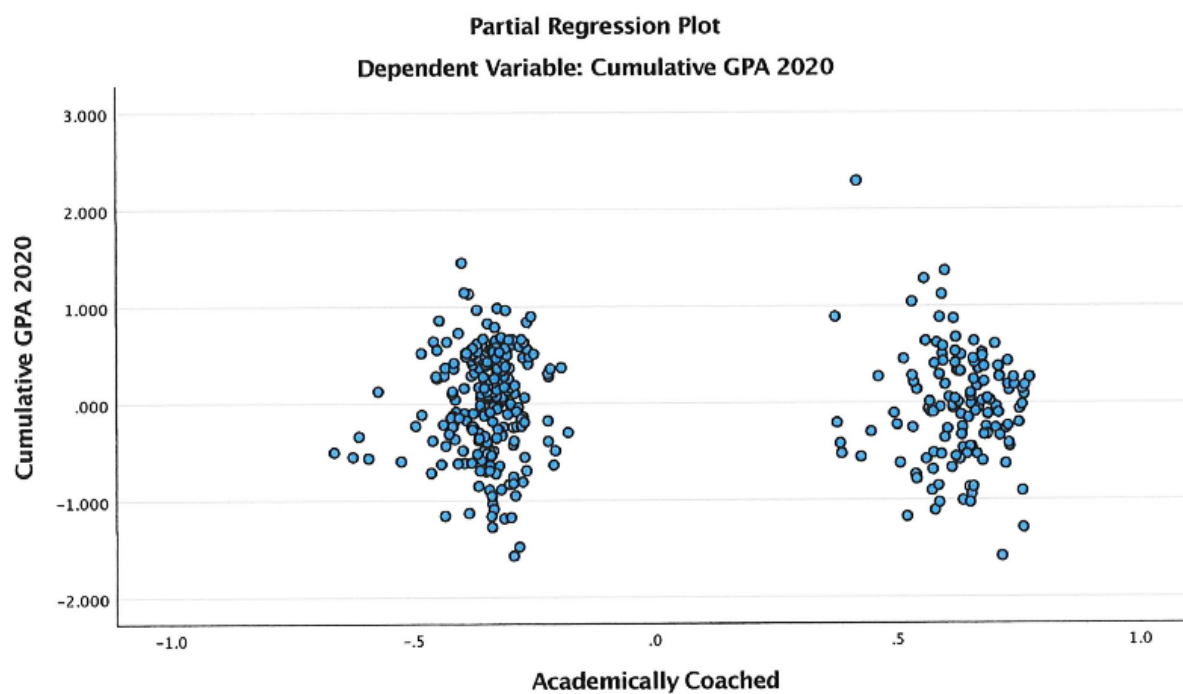
This section is guided by Laerd Statistics (2015).

#### *Dispersion Visuals*

CCR histogram dispersion before transformation.



**CCR histogram dispersion after reverse log transformation**

**Academic Coaching histogram dispersion before transformation (continuous)****Academic Coaching scatterplot dispersion after transformation (dichotomous)**

## APPENDIX P- Assumptions for Multiple Regression

### ASSUMPTIONS FOR MULTIVARIATE LINEAR REGRESSION (images A- I; 5 pp.)

This section is guided by Laerd Statistics (2015).

#### A. Assumption of Independents of Observations (Independence of Residuals)

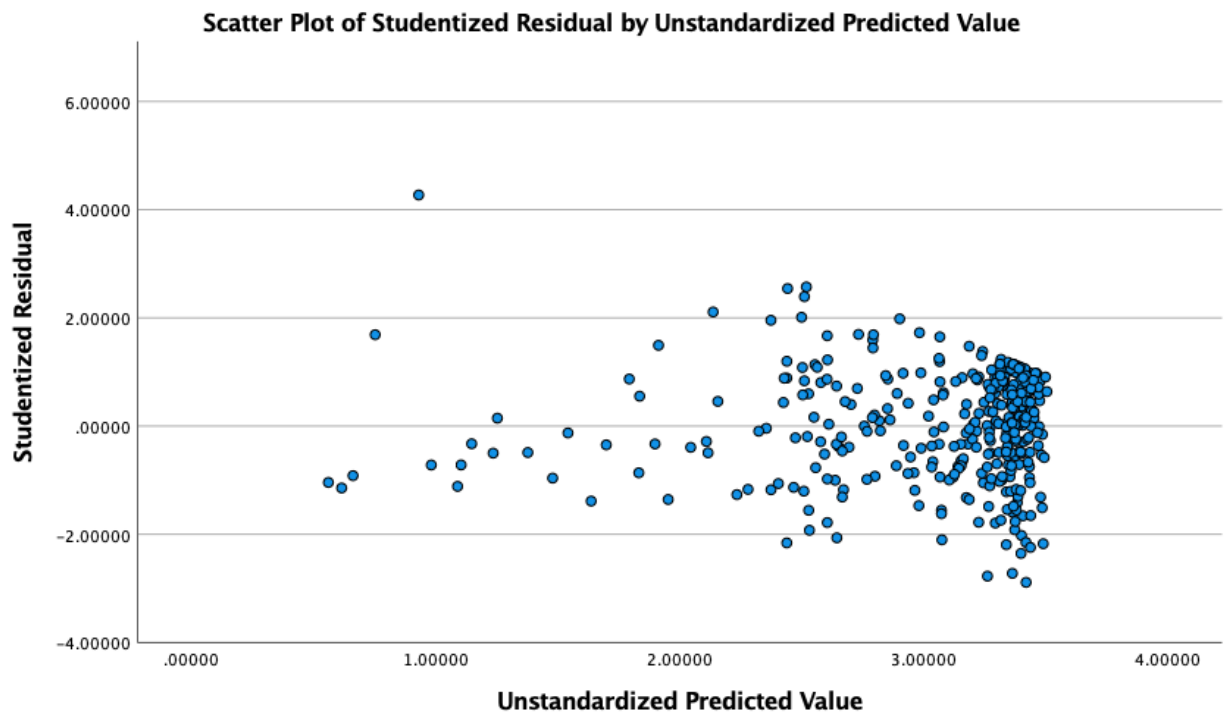
**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.710 <sup>a</sup>	.504	.498	.555749	1.816

a. Predictors: (Constant), Willing to Comm, LogRvTransformed CCR, Academically Coached, Staff Immediacy Total

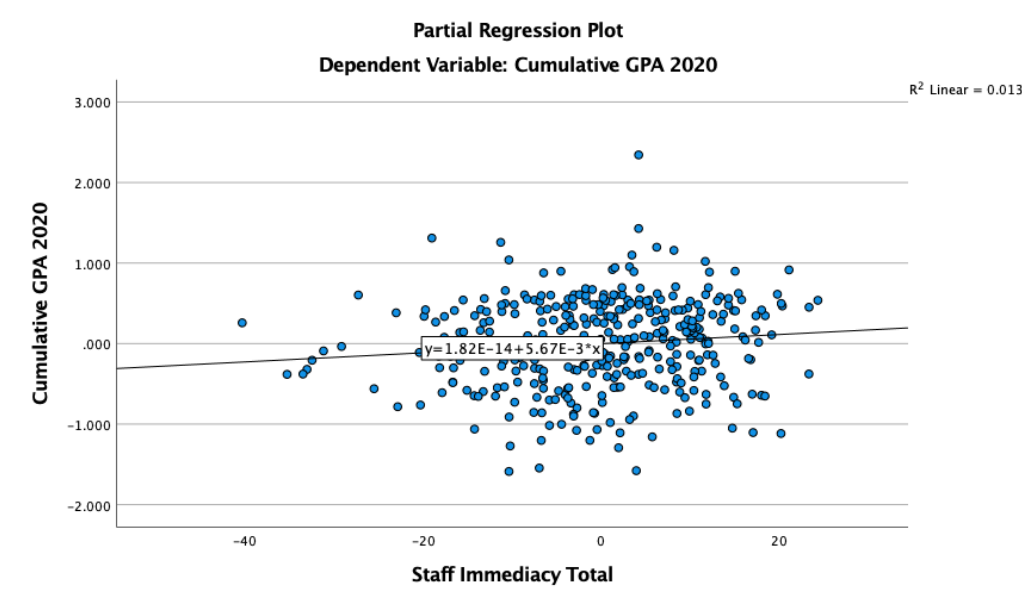
b. Dependent Variable: Cumulative GPA 2020

#### B. Assumption of Linearity (collective) AND Assumption of Homoscedasticity



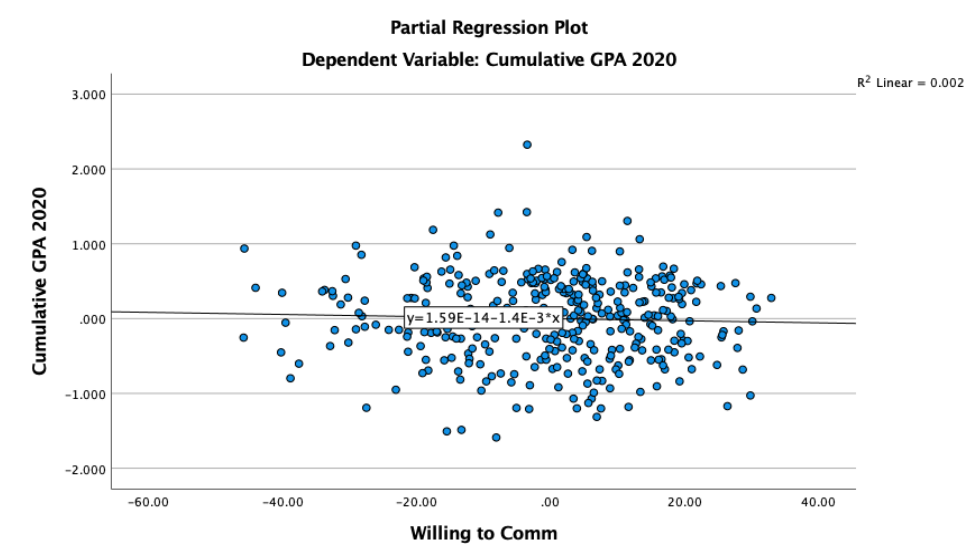
**C. Assumption of Linearity (college GPA and Staff NVI)**

R<sup>2</sup> Linear = .013



**D. Assumption of Linearity (college GPA and WTC)**

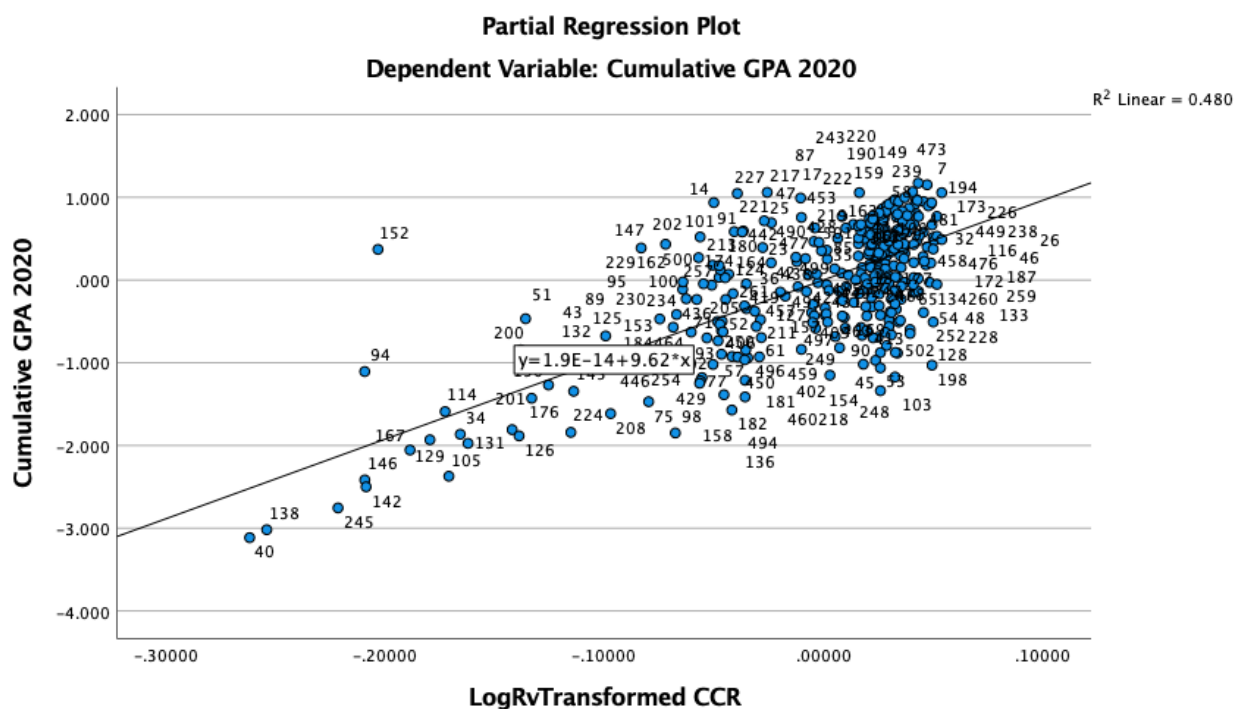
R<sup>2</sup> Linear = .002





### E. Assumption of Linearity (college GPA and log CCR)

R<sup>2</sup> Linear = .480



### F. Assumption of Multi-Collinearity and Decision to later Eliminate WTC ( $b = .456$ , ns)

Coefficients <sup>a</sup>												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1												
(Constant)	-16.306	1.050		-15.525	<.001	-18.371	-14.240					
Staff Immediacy Total	.006	.003	.082	2.152	.032	.000	.011	.158	.113	.080	.952	1.050
LogRvTransformed CCR	9.614	.529	.687	18.162	<.001	8.573	10.655	.703	.693	.677	.971	1.030
Academically Coached	-.079	.062	-.048	-1.283	.200	-.201	.042	-.141	-.068	-.048	.974	1.026
Willing to Comm	-.001	.002	-.028	-.747	.456	-.005	.002	-.021	-.039	-.028	.957	1.045

a. Dependent Variable: Cumulative GPA 2020

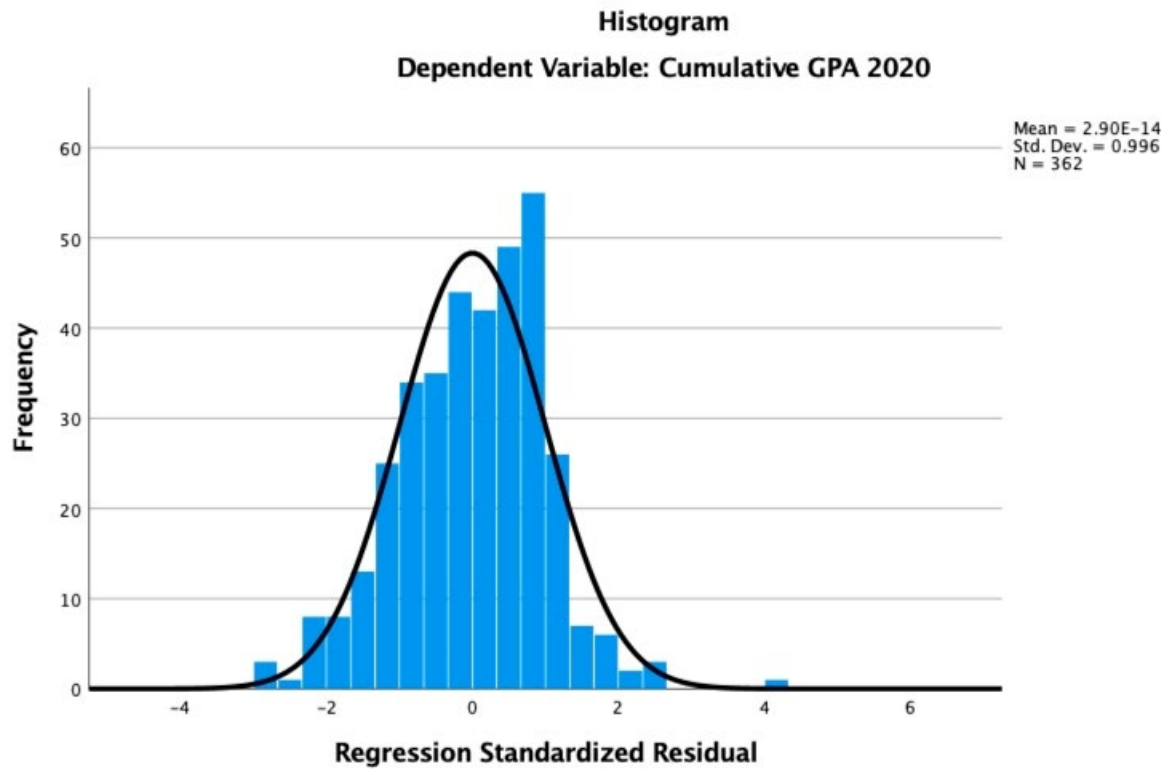
### G. Assumption of Unusual Points

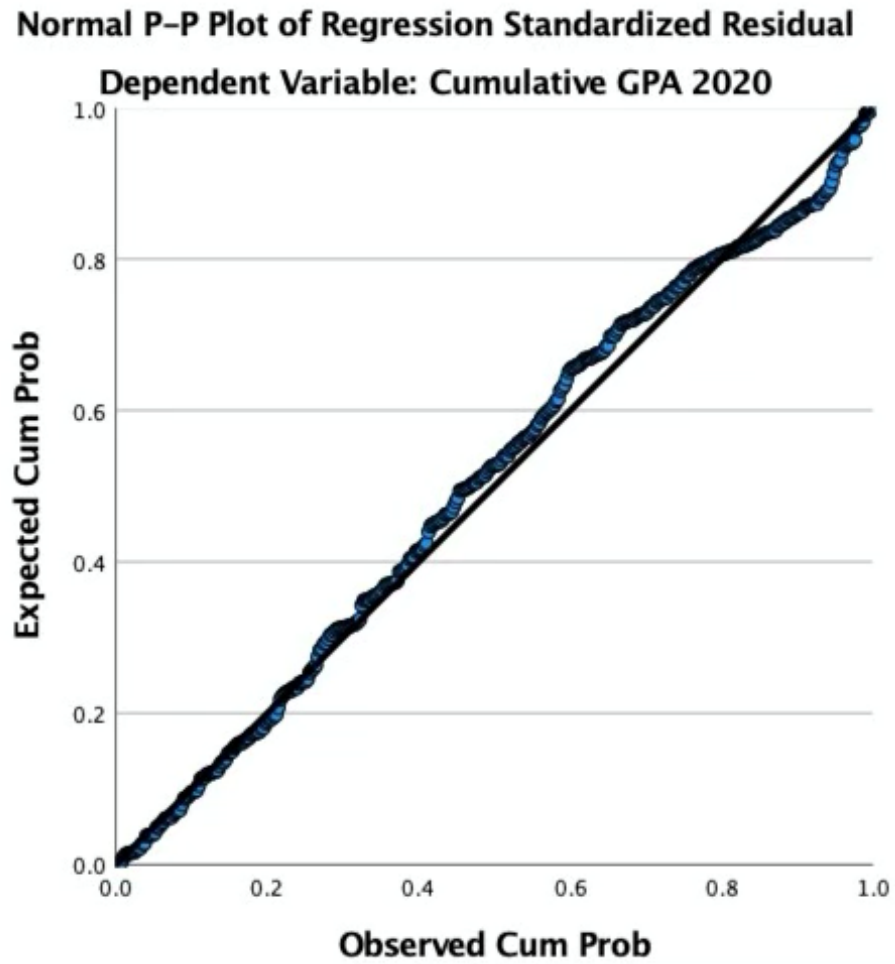
Casewise Diagnostics					
Case Number	FYE Case Number	Std. Residual	Cumulative GPA 2020	Predicted Value	Residual
362	152	4.186	3.250	.92496	2.325042

a. Dependent Variable: Cumulative GPA 2020

### *H. Assumption of Normality of Residuals*

#### **Histogram**



*I. Assumption of Normality of Residuals***P-P Plot**

## APPENDIX Q- Regression Model with Study Variables

All Students ( $n = 362$ )

### *Variables Entered/Removed (study variables)*

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	Dichotomous AC, Staff Immediacy Total, LogRvTransformed CCR <sup>b</sup>		Enter

a. Dependent Variable: Cumulative GPA 2020

b. All requested variables entered.

### *Model Summary (study variables)*

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.711 <sup>a</sup>	.506	.502	.553720	2.054

a. Predictors: (Constant), Dichotomous AC, Staff Immediacy Total, LogRvTransformed CCR

b. Dependent Variable: Cumulative GPA 2020

### *ANOVA Table (study variables)*

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.379	3	37.460	122.175	.000 <sup>b</sup>
	Residual	109.765	358	.307		
	Total	222.144	361			

a. Dependent Variable: Cumulative GPA 2020

b. Predictors: (Constant), Dichotomous AC, Staff Immediacy Total, LogRvTransformed CCR

### *Coefficients Table (study variables)*

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Zero-order	Correlations		Part	Collinearity Statistics	
		B	Std. Error				Lower Bound	Upper Bound		Partial			Tolerance	VIF
1	(Constant)	-16.286	1.042		-15.633	.000	-18.334	-14.237						
	Staff Immediacy Total	.005	.003	.071	1.883	.060	.000	.010	.158	.099	.070		.979	1.021
	LogRvTransformed	9.598	.526	.686	18.243	.000	8.564	10.633	.703	.694	.678		.976	1.025
	CCR													
	Dichotomous AC	-.140	.069	-.076	-2.013	.045	-.276	-.003	-.162	-.106	-.075		.979	1.021

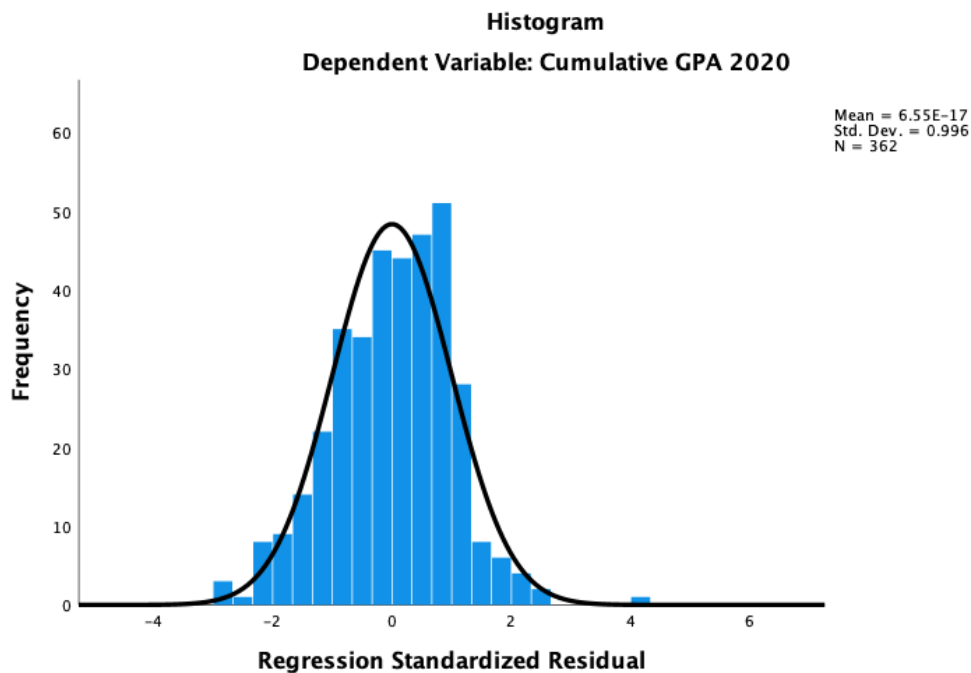
a. Dependent Variable: Cumulative GPA 2020

### *Residual Statistics (study variables)*

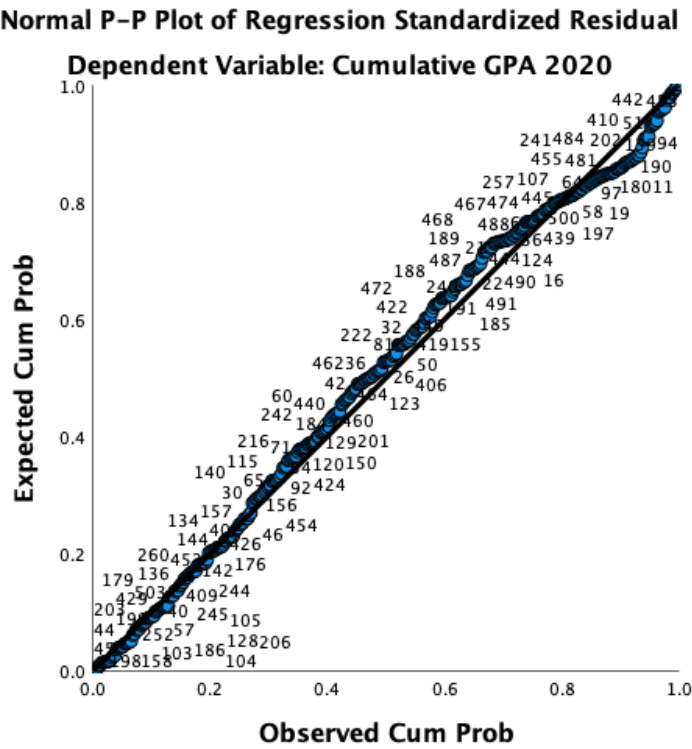
Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.58834	3.49660	3.03628	.557941	362
Residual	-1.597765	2.233233	.000000	.551415	362
Std. Predicted Value	-4.387	.825	.000	1.000	362
Std. Residual	-2.886	4.033	.000	.996	362

a. Dependent Variable: Cumulative GPA 2020

### *Histogram of Standardized Residual (study variables)*



PP Plot (study variables)



## Freshmen (n= 259)

### Variables Entered/Removed (study variables- freshmen)

**Variables Entered/Removed<sup>a,b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Dichotomous AC, LogRvTransformed CCR, Staff Immediacy Total <sup>c</sup>	.	Enter

a. Class Level = Freshman

b. Dependent Variable: Cumulative GPA 2020

c. All requested variables entered.

### Model Summary (study variables- freshmen)

**Model Summary<sup>a,c</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.720 <sup>b</sup>	.519	.513	.597351	1.999

a. Class Level = Freshman

b. Predictors: (Constant), Dichotomous AC, LogRvTransformed CCR, Staff Immediacy Total

c. Dependent Variable: Cumulative GPA 2020

### ANOVA Table (study variables- freshmen)

**ANOVA<sup>a,b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.088	3	32.696	91.629	<.001 <sup>c</sup>
	Residual	90.991	255	.357		
	Total	189.079	258			

a. Class Level = Freshman

b. Dependent Variable: Cumulative GPA 2020

c. Predictors: (Constant), Dichotomous AC, LogRvTransformed CCR, Staff Immediacy Total

### Coefficients Table (study variables- freshmen)

**Coefficients<sup>a,b</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-15.913	1.173		-13.571	.000	-18.222	-13.603					
	Staff Immediacy Total	.007	.003	.097	2.195	.029	.001	.014	.199	.136	.095	.966	1.035
	LogRvTransformed CCR	9.282	.593	.690	15.649	.000	8.114	10.451	.710	.700	.680	.971	1.029
	Dichotomous AC	-.131	.095	-.061	-1.387	.167	-.318	.055	-.158	-.087	-.060	.970	1.031

a. Class Level = Freshman

b. Dependent Variable: Cumulative GPA 2020

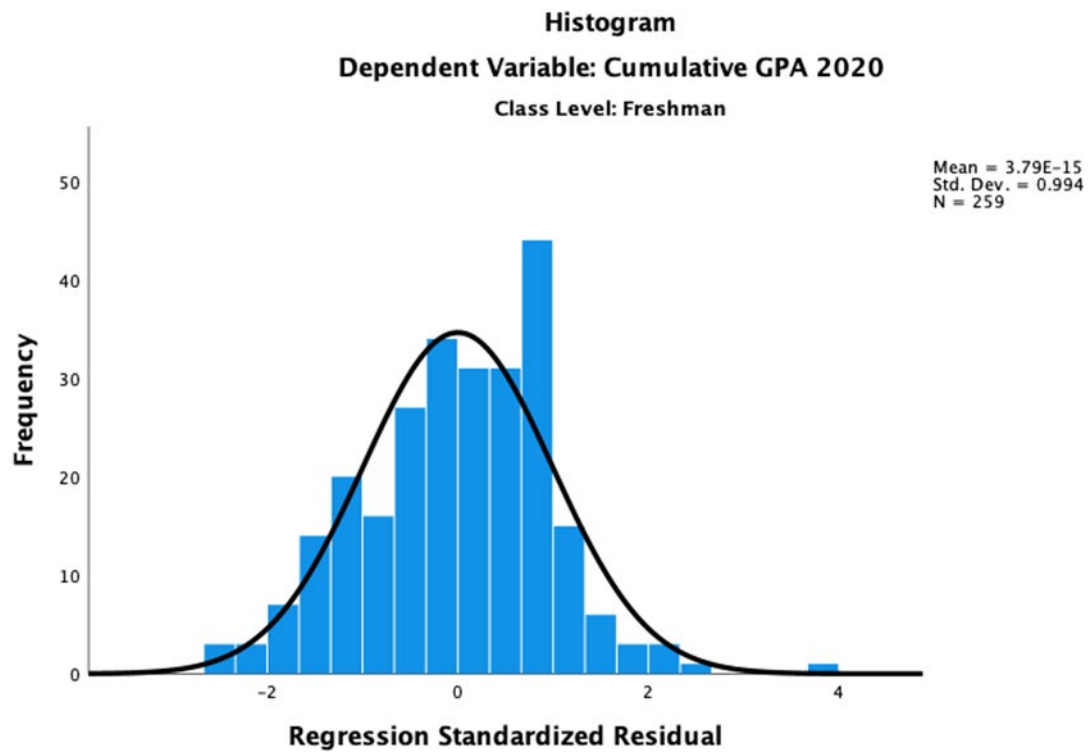
### *Residual Statistics (study variables- freshmen)*

Residuals Statistics <sup>a,b</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.62364	3.51203	2.97510	.616592	259
Residual	-1.563066	2.192458	.000000	.593868	259
Std. Predicted Value	-3.814	.871	.000	1.000	259
Std. Residual	-2.617	3.670	.000	.994	259

a. Class Level = Freshman

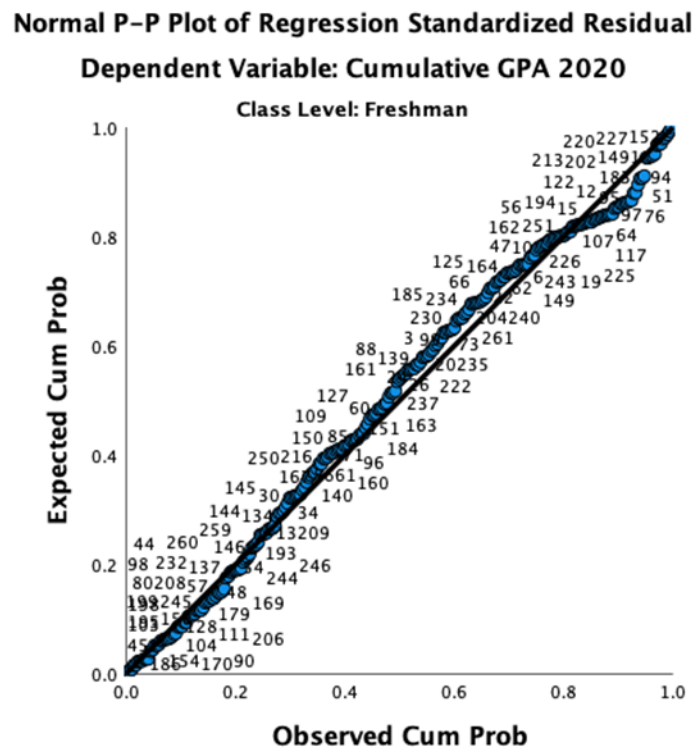
b. Dependent Variable: Cumulative GPA 2020

### *Histogram of Standardized Residual (study variables- freshmen)*





***PP Plot (study variables- freshmen)***



## Sophomores ( $n = 103$ )

### *Variables Entered/Removed (study variables -sophomores)*

**Residuals Statistics<sup>a,b</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.62364	3.51203	2.97510	.616592	259
Residual	-1.563066	2.192458	.000000	.593868	259
Std. Predicted Value	-3.814	.871	.000	1.000	259
Std. Residual	-2.617	3.670	.000	.994	259

a. Class Level = Freshman

b. Dependent Variable: Cumulative GPA 2020

### *Model Summary (study variables -sophomores)*

**Model Summary<sup>a,c</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.649 <sup>b</sup>	.422	.404	.416227	2.229

a. Class Level = Sophomore

b. Predictors: (Constant), Dichotomous AC, Staff Immediacy Total, LogRvTransformed CCR

c. Dependent Variable: Cumulative GPA 2020

### *ANOVA Table (study variables -sophomores)*

**ANOVA<sup>a,b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.506	3	4.169	24.062	<.001 <sup>c</sup>
	Residual	17.151	99	.173		
	Total	29.657	102			

a. Class Level = Sophomore

b. Dependent Variable: Cumulative GPA 2020

c. Predictors: (Constant), Dichotomous AC, Staff Immediacy Total, LogRvTransformed CCR

### *Coefficients Table (study variables -sophomores)*

**Coefficients<sup>a,b</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-20.722	3.236		-6.404	.000	-27.143	-14.301					
	Staff Immediacy Total	-.001	.004	-.027	-.356	.722	-.009	.006	-.027	-.036	-.027	.999	1.001
	LogRvTransformed CCR	12.181	1.617	.601	7.531	.000	8.971	15.390	.638	.603	.576	.916	1.092
	Dichotomous AC	-.143	.091	-.125	-1.566	.120	-.324	.038	-.299	-.156	-.120	.915	1.093

a. Class Level = Sophomore

b. Dependent Variable: Cumulative GPA 2020

### Residuals Statistics (study variables -sophomores)

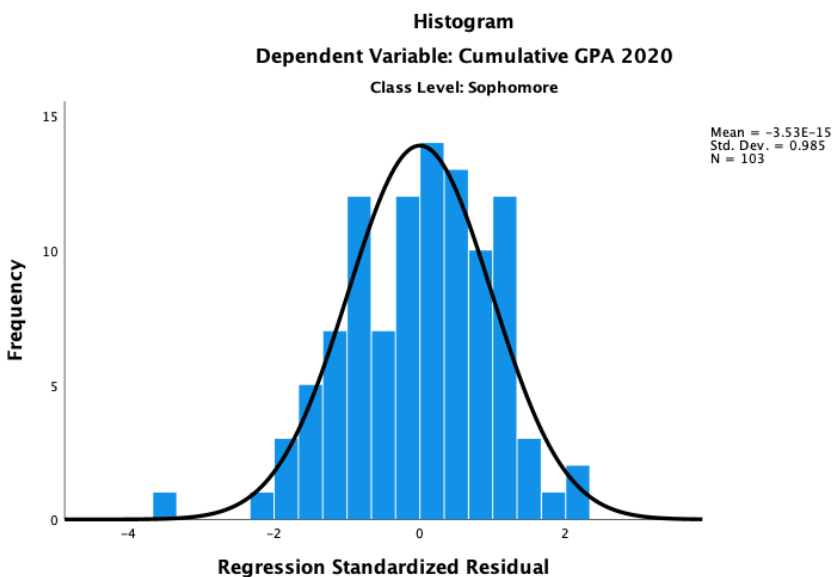
Residuals Statistics<sup>a,b</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.78716	3.54285	3.19014	.350150	103
Residual	-1.393769	.895122	.000000	.410060	103
Std. Predicted Value	-4.007	1.007	.000	1.000	103
Std. Residual	-3.349	2.151	.000	.985	103

a. Class Level = Sophomore

b. Dependent Variable: Cumulative GPA 2020

### Histogram of Standardized Residual (study variables -sophomores)

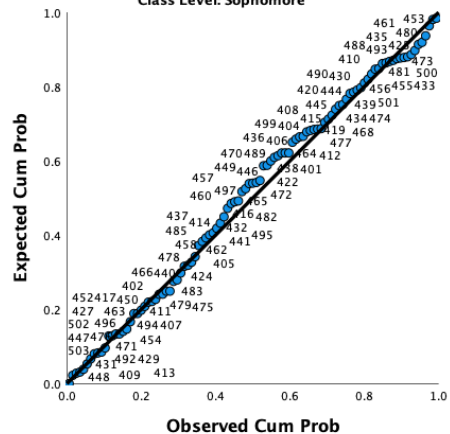


### PP Plot (study variables -sophomores)

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Cumulative GPA 2020

Class Level: Sophomore



## APPENDIX R- Sequential Regression

**All Students ( $n= 362$ )**

### *Variables Entered/Removed (sequential)*

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	High School GPA <sup>b</sup>	.	Enter
2	Staff Immediacy Total, LogRvTransformed CCR, Performance in FYS <sup>b</sup>	.	Enter

a. Dependent Variable: Cumulative GPA 2020

b. All requested variables entered.

### *Model Summary (sequential)*

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.440 <sup>a</sup>	.193	.191	.705474	.193	86.347	1	360	.000	
2	.778 <sup>b</sup>	.605	.601	.495541	.412	124.211	3	357	.000	1.967

a. Predictors: (Constant), High School GPA

b. Predictors: (Constant), High School GPA, Staff Immediacy Total, LogRvTransformed CCR, Performance in FYS

c. Dependent Variable: Cumulative GPA 2020

**ANOVA Table (sequential)**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.974	1	42.974	86.347	.000 <sup>b</sup>
	Residual	179.170	360	.498		
	Total	222.144	361			
2	Regression	134.478	4	33.620	136.909	.000 <sup>c</sup>
	Residual	87.665	357	.246		
	Total	222.144	361			

a. Dependent Variable: Cumulative GPA 2020

b. Predictors: (Constant), High School GPA

c. Predictors: (Constant), High School GPA, Staff Immediacy Total, CCR (reverse Log),  
Performance in FYS

**Coefficients Table (sequential)**

Coefficients <sup>a</sup>													
Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-.102	.340		-.299	.765	-.770	.566					
	High School GPA	.872	.094	.440	9.292	.000	.688	1.057	.440	.440	.440	1.000	1.000
2	(Constant)	-13.210	1.074		-12.302	.000	-15.322	-11.098					
	High School GPA	.438	.071	.221	6.180	.000	.299	.578	.440	.311	.205	.865	1.156
	Staff Immediacy Total	.002	.002	.024	.708	.480	-.003	.006	.158	.037	.024	.961	1.041
	LogRvTransformed CCR	6.935	.576	.496	12.033	.000	5.801	8.068	.703	.537	.400	.651	1.535
	Performance in FYS	.239	.041	.251	5.900	.000	.160	.319	.622	.298	.196	.612	1.634

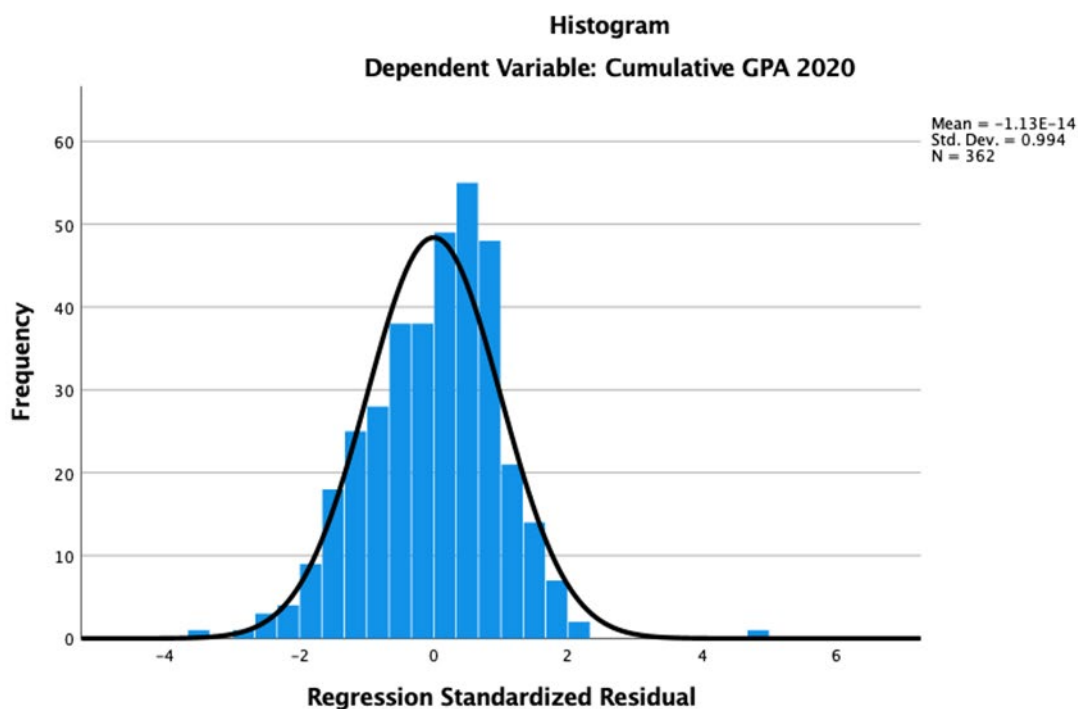
a. Dependent Variable: Cumulative GPA 2020

**Residual Statistics (sequential)**

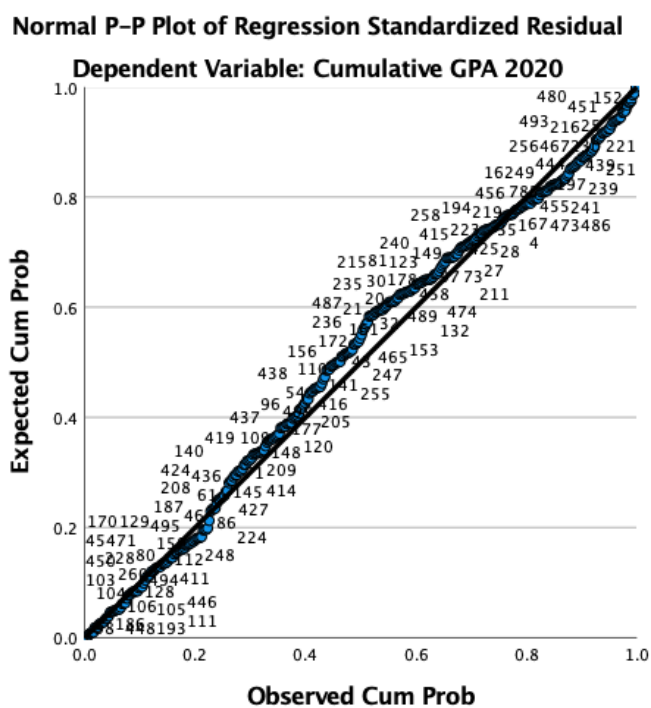
Residuals Statistics <sup>a</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.12665	3.56814	3.03628	.610341	362
Std. Predicted Value	-4.767	.871	.000	1.000	362
Standard Error of Predicted Value	.026	.150	.054	.022	362
Adjusted Predicted Value	.13652	3.57547	3.03574	.612174	362
Residual	-1.660478	2.441039	.000000	.492788	362
Std. Residual	-3.351	4.926	.000	.994	362
Stud. Residual	-3.365	5.138	.001	1.004	362
Deleted Residual	-1.674461	2.655600	.000540	.502385	362
Stud. Deleted Residual	-3.415	5.332	.001	1.009	362
Mahal. Distance	.033	31.956	3.989	4.931	362
Cook's Distance	.000	.464	.004	.025	362
Centered Leverage Value	.000	.089	.011	.014	362

a. Dependent Variable: Cumulative GPA 2020

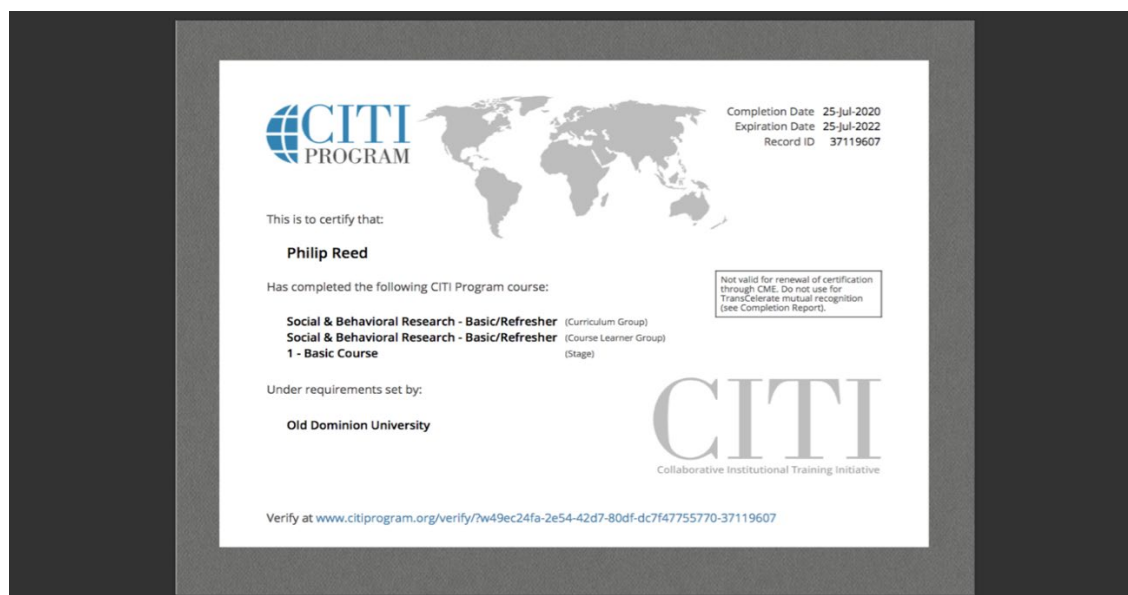
### Histogram of Standardized Residual (sequential)



### PP Plot (sequential)



## APPENDIX S- Researcher Credentials



## VITA

Donna L. Fenton  
Old Dominion University  
Department of STEM Education  
4101-A Education Building

### EDUCATION

Bachelor of Science in Biology (January 1984), West Virginia Wesleyan College  
Master of Arts in Communication Studies/Corporate (August 2006), West Virginia University

### EMPLOYMENT

Marietta College  
Academic Coach and Retention Specialist/Instructor (October 2018- present)  
Boston Scientific, Cardiac Rhythm Management  
Clinical Education Specialist (2009-2018)  
West Virginia University at Parkersburg  
Adjunct Professor (Fall 2008- Fall 2009), Humanities and Communication  
Novartis Pharmaceutical Corporation  
Senior Sales Consultant (2006-2008)  
Sanofi Pharmaceutical Company (Marion Laboratories, Hoechst Marion Roussel, Aventis)  
Certified Senior Professional Medical Representative (1996-2000)  
Certified Senior Medical Representative (1992-1996)  
Professional Sales Representative (1988-1992)  
Sales Representative (1985-1988)

### SERVICE, HONOR, AND CERTIFICATION

Southern States Communication Association (SSCA), Peer Reviewer, 2019  
American Educational Research Association (AERA), Peer Reviewer, 2020  
Phi Kappa Phi- Honorary Society, 1983; 2020  
Certified Cardiac Device Specialist (CCDS), 2011-2021  
International Board of Heart Rhythm Examiners/Allied Professionals (IBHRE/AP)

### ORGANIZATIONS

National College Learning Center Association (NCLCA)  
Association for Coaching and Tutoring Profession (ACTP)  
Ohio College Learning Center Association (OCLCA)

### PUBLICATION

Fenton, D. L. (2020) Review of *Everything you ever wanted to know about learning centers: And then some*, by P. Turrentine. *The Learning Assistance Review* 25(1),73-78.

**Marcella Gale served as editor for this thesis.**